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## ORIGINAL COMMUNICATIONS.

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### PAPILLITIS WITH OTOGENOUS COMPLICATIONS.*

BY DR. ERICH RUTTIN, VIENNA.

Gentlemen! There is scarcely a symptom of intra-cranial disease about which there is such a difference of opinion as to its diagnostic worth as there is about the changes in the fundus of the eye. While these changes were formerly considered so important a symptom that the otologist often made the question of an operation dependent upon the condition of the fundus oculi alone, recently experiments which disprove the diagnostic worth of these changes in the fundus have increased more and more. Takabataka of Koerner's clinic, in particular, has taken this standpoint.

In conjunction with my brother, Dr. O. Ruttin, assistant at Dr. Dimmer's eye clinic, I have tried to come nearer to the questions concerned with our material. First we must mention that, in the course of our observations, extending over almost three years, we have naturally had to shift our manner of observations to correspond with our change of view; whereas in the beginning the examination of those suffering with meningitis and cranial abscesses seemed to promise the greatest profit, we found in the course of our observations that this was not the case and that the cases of sinus thrombosis offered the most interesting material.

Among twelve cerebellar abscesses we found changes in the fundus of the eye in three cases, and in twenty-three cases of abscess in the temporal lobe we found the same number. But of about ninety cases of sinus thrombosis we take only about thirty into

*Read before the meeting of the German Otological Congress, Frankfurt, a. M., June 3, 1911.

account, for only this number was systematically examined every five to ten days. We were influenced to undertake this systematic examination only by recognition of the fact that papillitis may develop very late after sinus thrombosis or after jugular ligation respectively.

Of the twenty-three abscesses in the temporal lobe, there were changes in the fundus of the eye in only three cases. Of these three patients, two died, and those two of meningitis. The third has recovered. In the two other cases it is not impossible that a thrombus of the superior petrosal sinus existed for there were strikingly extreme changes in the border of the pyramid with extreme indurative changes of the dura in this region.

It would seem then, at least judging from our material, that with otogenous abscesses in the temporal lobe, changes in the fundus of the eye are quite rare and it cannot even be stated with certainty whether the pathological condition of the fundus oculi of many of the cases described in the literature, are not to be referred to the extradural changes rather than to the cranial abscess. I do not believe, however, judging from the observations on this one case, that it is these extradural changes that cause the papillitis; I should rather assume that it is in these cases a question of compression of the superior or inferior petrosal sinus or of both sinuses.

The per cent of papillitis in cases of cerebral abscesses is not greater. Of our twelve cases only three showed changes in the fundus of the eye, and one of these was a case of retinitis albuminuria.

If we consider how frequently even small tumors in the posterior temporal lobe cause papillitis and especially how regularly tumors in the pontile angle give rise to papillitis, we cannot but be surprised.

But the explanation seems to lie in the following: the pressure in cerebellar abscesses is seldom a constant one. Judging by our observations we must assume that a true engorgement and that an engorgement of the cavernous sinus is the cause of papillitis; this engorgement is brought about by regurgitation of the blood from the superior and inferior petrosal sinuses. Here is a picture of a cranial tumor or rather of two small tumor metastases which caused the papillitis. The tumors are so placed that they prevent the return of blood from the sinus and especially block the way to the inferior petrosal sinus. If we take into account that with other tumors too, the pressure upon the base of the skull may be so great

as to frequently even change its configuration, it is probable that in such cases the return of blood from the deep-lying inferior petrosal is interfered with or even prevented.

If we now assume that the regurgitation from the superior and the inferior petrosal sinuses toward the cavernous sinus is the cause of the papillitis, then among all otogenous intra-cranial complications, sinus thrombosis in respect to the operative exclusion of the sinus-jugularis region should give the highest per cent of papillitis. This supposition also seems to be supported if systematic investigations are instituted. Of our thirty cases, eight had papillitis. Six of these cases developed papillitis only after jugular ligation and the removal of the sinus; in one case there had, unfortunately, been no examination of the eyes and in another case the papillitis had existed before the ligation. The period of its development varied from two days to a month after the operation. In a recently published work, Wagener has given us a series of cases of papillitis with intra-cranial complications and he attributes them all, including the cases with sinus thrombus, to serous meningitis. He holds the serous meningitis responsible for the development of papillitis. In four of our cases, serous meningitis may be absolutely excluded. The following case is characteristic and conclusive:

M. Sch., 26 years old. The patient had suffered from suppuration of the middle-ear for three years. For a week there had been a suopression of pus and the patient stated that there had been some dizziness and fever. On the evening of December 14, vomiting, headache, chills and a high fever developed.

December 15, admitted to the ear clinic.

Right ear, fetid suppuration. The depths of the auditory canal were filled up with granulations. Mastoid process at the point, at the antrum and at the margin there was a sensitiveness to pressure. A functional examination, typical for an obstruction to sound conduction, gave no special results. Fever, 40.5 degrees. Chills.

Operated the night of December 15. (Dr. Ruttin).

Mastoid process, sclerotic, sinus prolapsed, putrefied cholesteatoma, which extended to the wall of the sinus. Sinus wall covered with granulations. Ligation of the well-filled jugularis and facialis communalis. Incision in the sinus. Bleeding in full jet.

January 16. Afebrile, dismissed.

On January 26 she was again admitted because the out-patient change of bandages was always followed by considerable hemorrhage.

January 27. Temperature 40.0°, pulse 132, vomiting, no dizziness, no nystagmus, condition of the nerve (primary infield) negative, angina, fundus oculi (O. Ruttin) papillitis.

A bluish-red discoloration of the wound and the region behind the ear appeared simultaneously. It became more and more pronounced and after about two weeks appeared as distinct ectatic veins. After some two months, this discoloration was still more pronounced (Maulage). During this second stay in the hospital the fever had also continued during ten days and on four days had had a distinct pyemic character.

The incidents which here transpired after the jugular ligation can scarcely be accounted for, yet there can be no doubt that it was here a question of a gradually increasing engorgement, resulting in papillitis and the venous ectasia.

As to why papillitis should appear in one case of sinus thrombosis and not in another, we can at present form only an anatomical conjecture, for we know that: (1) the sinus connections are variable; (2) often where there is a thrombosed sinus, good drainage undoubtedly still exists out of the cavernous sinus, either through the superior petrosal sinus via sinus into the mastoid veins, or through the inferior petrosal sinus via bulbus into vena conduloidea; (3) the different development of the sinuses and the jugularis on the two sides is also not without its influence on these conditions.

In any case these anatomical conditions probably play a more important part in the development of papillitis, in sinus thrombosis with its extreme one-sided effects, than for instance in cerebellar abscesses or chronic hydrocephalus with equal pressure upon all four petrosal sinuses. I have taken the liberty of briefly sketching these thoughts, the clinical data and the literature upon this subject are so extensive that they can only be the subject of a detailed publication for which I have not yet found the time. Besides this, I have temporarily met with great difficulties in experimental proof. I have ligated the jugular vein of monkeys and have kept the sinuses compressed at various places by inserting sterile pledgets. However, as the season has thus far been very unfavorable, most of these monkeys have died of pneumonia in a short time. I hope that in the warmer seasons I may yet be successful in these experiments.

I should also like to remark that after jugularis ligation, besides papillitis, other symptoms of engorgement may arise, especially when the bulbus is well filled, for instance, unilateral headache (in

one case), paresis of the abducens (in three cases), and delirium in one case where there was no papillitis but which could only be subject to observation for a short time.

I do not wish to leave unmentioned that in one case of complete thrombosis of the sinus transversus lateralis and bulbus with cleaning out of the sinus and jugular ligation, papillitis was diagnosed immediately afterwards (there had been no examination prior to the operation since I had not suspected any complications in this case). When the second side also had to be operated upon thirty days later, and an equally extended thrombosis was found, I again performed a jugular ligation and removal of the sinus, whereupon the papillitis perceptibly increased.

I have not spoken of the cases of meningitis because here we never found papillitis, only neuritis, a difference upon which my brother and I will report in a treatise written in collaboration.

It is also of interest that in one case of pronounced otogenous sepsis without sinus thrombus, in which only a sinus incision was made without ligation, a septic neuritis developed, but no papillitis.

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**Circumscribed Ganglionic Tuberculosis of the Lobe of the Ear.**

F. T. HENRICH. *Ztschr. f. Ohrenh. u. f. Krankh. d. Luftw.*, Bd. 62, Heft 4, p. 334, 1911.

The case presented the usual clinical and histological features of ganglionic tuberculosis of the ear-lobe: walnut-size, nodulated tumor of slow growth and solid consistency. Microscopic examination: epithelial tuberculosis originating in the connective tissues and protective epidermal layer. The infection had apparently resulted from wearing ear-rings. Under prognostic considerations the author remarks that a cure is not always effected by operation. The present tumor was the recurrence of one removed five or six years ago. Six months after the removal of the latter a tumor, half the size of a pea in consistency and color, similar to the one removed, appeared on the helix. Later the back of the auricle and its surrounding region became covered with numerous small, lupus-like nodules. ED.

# VERTIGO AND DISTURBANCES OF THE EQUILIBRIUM IN RECENT SECONDARY SYPHILIS.

BY DR. OSCAR BECK, VIENNA.

About a year ago I called attention to the changes that may occasionally be noted in the auditory organs of syphilitic people after the injection of salvarsan, and which there was scarcely opportunity to observe in the days before salvarsan. On the one hand, these changes had to do with the very surprising curative effects in those cases of inherited syphilis, where the hearing was not totally destroyed. These results were the more gratifying, because in those affections of the ear which may be traced to the nerve-apparatus, every other therapy proves quite powerless in the great majority of cases, or results only in slight and temporary improvement. With Ehrlich's preparation there was not only an improvement in hearing attained, but this improvement has thus far, though with some slight variations, been permanent. Heike and Wechselmann[1] have confirmed in all its details this remarkably rapid improvement in hearing in cases of hereditary lues. Since these rapid changes in the functioning capacity of the cochlear apparatus can scarcely be reconciled with our former conceptions of the anatomical conditions, these observations were in the opinion of these two authors, calculated to act as an incentive to further investigations of the pathological anatomy of auricular lues. Many years ago Urbantschitsch[2] pointed out that deafness or hardness of hearing in inherited syphilis need not always be caused by irreparable anatomical changes, for which Gradenigo[3] assumes a primary labyrinthitis. The experiments with salvarsan therapy make Rosenstein's[4] assumption of neuritis acoustica appear much more plausible for just these cases.

On the other hand, from several dermatological departments patients were sent to our clinic for otological examination. whose aural condition, though not unique, must yet be characterized as rare.

Upon the occasion of the report given by the chief of my clinic, Professor Urbantschitsch,[5] before the medical association, attention was called to this fact, and I took the same standpoint when giving a demonstration of three salvarsan-patients before the same association.

*Read before the meeting of the German Otological Congress, Frankfurt, a. M., June 3, 1911.

All the publications which have appeared since then repeat the point of view which I have held from the beginning; that one may observe changes in the human auditory organs where lues has not been treated with salvarsan similar to those where that remedy has been injected. But the aggregate appearance of such affections after the arseno-benzol treatment in so early a stage of syphilis could not but cause surprise.

On many sides the objection, not entirely unjustifiable, has been raised that the behavior of the auditory organs in lues has been studied very little.

To my knowledge, first of all Gerber[6] has devoted himself to this study, and has recorded his experiments in this field in his book. But he gives the luetic affection of the upper air-passages much more space. In the salvarsan debate in Vienna, Alexander also reported on the examination of the auditory organs of luetic patients[7].

However, it seemed opportune and, for the decision of the question as to which affections we are to attribute to salvarsan and which to a purely luetic origin, important to systematically investigate considerable material in this connection. This was made possible by the kind co-operation of the Finger's and Riehl's clinics and of Ehrmann's department. At present I have at my disposal a thoroughly investigated series of observations covering the cases of six hundred patients—a number which even in view of the polymorphous course of lues would seem sufficient to permit of an opinion on this question, and the effect of anti-luetic preparations, and to support this opinion by clinical facts.

Before beginning the specific treatment all patients were examined for the functional ability of the cochlear apparatus and a tuning-fork test was made. If the middle ear was intact and there were normal results from the tuning-fork test, if there was no spontaneous nystagmus even when the glance was directed to the extreme right or left, if the history of the case gave no symptoms which would lead one to conclude that there had formerly been an affection of the cochlear or vestibular apparatus, it was usual to refrain from testing whether the labyrinth of such syphilitics was responsive to rotary and thermal excitations.

Where there is on both sides a normal sense of hearing for the spoken word and a normal duration of perception for tuning-fork tones, not only with conduction by the cranial bones, but also with conduction by air—I shall not here enter further into the subject of the decrease of cranial conduction—when all spontaneous

nystagmus is lacking, and the history of the case is entirely negative, an infection of the vestibular region may practically be excluded.

If, however, the slightest suspicion of pathological changes in the region of the inner-ear, of the vestibular terminal apparatus and its central tracts arose, an examination of the vestibule semi-circular canal followed the examination of the cochlear apparatus.

If during or after the treatment, there were any aural disturbances, such as humming in the ears, vertigo, etc., the patients were subjected to a second examination.

I shall to-day speak only of such of my observations as treat of disturbances in the vestibular apparatus in recent attacks of lues, without occupying myself further with the affections of the middle-ear or the diseases of the auditory nerve region.

Complaints of headache, dullness, vertigo, and buzzing in the ears were by no means rare in the beginning of or during the first exanthemata.

With the objective results of the examinations as a basis, such patients may be divided into three distinct groups:

GROUP 1.—The otic and neurotic examinations give negative results.

GROUP 2—Lateral-rotatory nystagmus toward one or both sides exists. Disturbances in bodily equilibrium. The vestibular reaction is typical and without demonstrable difference in the excitability of the two sides.

GROUP 3.—Lateral rotatory nystagmus toward one or both sides exists. There are disturbances in the bodily equilibrium and differences in the galvanic excitability of the two vestibular apparatuses.

AD. I. The otic examination can disclose no objective condition to account for the existing complaints. A careful neurotic examination also results negatively.

AD. II. In the cases of purely lateral nystagmus, which was generally greater toward one side or the other, there was in both labyrinths an equal and normal sensibility to caloric, rotatory and galvanic excitations. The vertigo is therefore to be considered non-labyrinthine. Another important point also goes to show this: If the patients, with closed eyes and legs drawn together, be examined for Romberg's phenomenon, a swaying of the whole body but no tendency to fall in any one direction. Changing the position of the head also has no influence upon this direction. This is characteristic of vestibular disturbance and it is distinguished from all others, for instance: the hysterical, the cerebellar, etc., in that there exists a strict relation between the direction of the nystag-

mus, of the position of the head and the direction of the equilibral disturbances. (Bárány[8]).

In patients of this sort, the character of the nystagmus as well as the disturbances in the equilibrium of the body bear a distinctly central character. Supported by the existing symptoms, I should, therefore, be inclined to assume some disturbance in the region of the posterior cranial fossa, although I am not in a position to say anything definite as to its character. Lang has described meningeal irritations in the early stages of syphilis.[9] Continued nervous disturbances in recent secondary syphilis are described by Finger,[10] who in fifty cases found an increase, sometimes a very marked one, in the reflex-excitability of the skin and tendons just before and at the time of the proruption of the exanthema, which was soon followed by a decrease in reflex-excitability, often decreasing to far below normal—in some cases even as far as "0." Slowly and gradually the reflex-excitability again increased to its normal degree, only attaining this several weeks after the disappearance of the exanthemata. Thus far I have observed seven cases belonging to group 2.

Ad. III. From the standpoint of the otologist, those patients in whom the bulbar movements may be separated into a quick and a slow component, i. e., in whom the existing spontaneous nystagmus bears the typical vestibular character, are the most interesting. When the glance is directed to the extreme right or left or when visual fixation is excluded by having the patient wear an opaque glass, the rotatory nystagmus can be especially well seen.

If one tests the vestibular excitability of such patients, first on one, then on the other side, a typical reaction for all applied stimuli will be found.

But the situation is different if the labyrinthine tonus of the two sides be compared, and tests to see whether there are not differences in the excitability of the two vestibular terminal apparatuses or of their central tracts be made.

As to the method of examination, I have employed the simultaneous, homogeneous, bi-lateral labyrinthine stimulus according to Ruttin.[11] This kind of comparative measuring seems to me, for reasons which I have already given in another place, the one that is thus far the most negligible.

The essential element in this method consists in stimulating both labyrinths at the same time, with the same intensity, and in the same manner, i. e., either thermally or galvanically.

If the tonus of the vestibular terminal apparatus be alike on both sides, the bulbi of the patient will remain in repose during the

caloric test; if the tonus of the central vestibular tracts be equal, they will remain in repose during the galvanic tests.

A difference in the excitability of the two sides will manifest itself by the appearance of a nystagmus, or if a spontaneous nystagmus already exists, its intensity will be appreciably increased or diminished.

Now if the syphilitics of this group were stimulated calorically on both sides, no change took place in the behavior of the spontaneous nystagmus which already existed, i. e., there was no difference in the tonus of the vestibular terminal apparatuses.

The galvanic test was conducted in the following manner: Two button electrodes, attached to a springchafe, were applied at the same place on each concha and connected with the pole by a divided cable. A plate electrode, connected with the other pole, was buckled into place at the center of the patient's forehead. The current was then gradually increased and the bulbi of the patient very carefully observed.

With the simultaneous excitation of both labyrinths from the same pole, it is shown that negative nystagmus toward the affected or positive nystagmus toward the healthy side is to be considered as an increased excitability of the affected side, positive nystagmus toward the affected or negative nystagmus toward the healthy side as decreased sensitiveness of the affected side.

In examining eleven patients I nine times found a difference in the excitability of the central vestibular tracts while in two cases the result of the examination was uncertain.

Whether this difference is caused by a below-normal excitability of the one or an above-normal excitability of the other side, it is extremely difficult to say.

It is therefore possible to find an objective, authentic cause for the feeling of dizziness of which luetics complain before and during the eruption: a difference in the galvanic excitability of the right and the left vestibular nervous regions.

Now we know that a certain per cent of people with no otic or nervous disease—quite apart from a luetic affection—may show spontaneous nystagmus when the glance is directed to the extreme side.

With my patients it is not a question of such individuals since none of them showed any spontaneous movements of the bulbus after these manifestations had died away.

Since the case histories of these patients offer nothing of peculiar interest I shall refrain from giving them here. But they were all

cases of patients with a heavy exanthema, which might lead one to think that some swollen condition in the nervous region or its neighborhood had caused this change. Only the reports of autopsies could answer this question and I have none at my disposal.

At the time when my chief was connected with Sigmund's clinic, he observed similar disturbances which disappeared spontaneously when the exanthems disappeared. Sigmund's treatment of such patients consisted in having them wrapped in warm blankets and allowing them to perspire for several hours. We obtain the same results when we occasionally administer the pilocarpin treatments.

The fact that a prolonged diaphoreses is beneficial tends to confirm my supposition that we have to do with inflammatory conditions in the nervous regions.

All the patients of Groups II and III showed a more or less heavy exanthema. In five cases the feeling of dizziness only became noticeable after the exanthema had existed for some time. Four of these patients had been treated with soluble preparations of quicksilver. Whether these signs of central irritation were co-incident with the reaction of Jerisch-Herxheimer or whether the latter even existed I did not succeed in learning. The fifth patient had received salicylic injections. When he came to consult me about the vertigo he was suffering from stomatitis mercurialis.

Groups I and III have much in common as regards the etiology of the syphilid and the differences in the clinical conditions may perhaps be explained by different localizations of one and the same process.

My observations on the time of the changes in the vestibular nerve agree with the information furnished by Gerber, who found that the beginning of secondary labyrinthine affections was generally co-incident with the breaking out of secondary nasal and pharyngeal disturbances.

In fifteen out of thirty-four cases Habermann found that the appearance of the labyrinthine affection and the general symptoms were simultaneous.[13]

But when Gerber asserts that in syphilis as in other diseases of the ear it is often difficult or impossible to determine to what extent the labyrinth, to what extent the nerve is affected, this statement was only applicable before the introduction of Ruttin's method of examination. Not only when there is a complete exclusion of sound but also when there are changes in the vestibular apparatus, a differential diagnosis of the primary seat of the trouble may be made. Consequently I cannot further agree with Gerber's opinion that isolated specific affections of a single cerebral nerve can scarcely

occur and that with the auditory nerve at least the facial nerve must be affected. We too have observed cases such as those of which Gerber is thinking. But quite apart from the cases of complete and isolated exclusion of the ramus vestibularis which are given later, the report of my Group III shows that luetic affections of a cerebral nerve not only occur but that they are perhaps more common than we have hitherto been accustomed to suppose.

The highest degree of this form of disease of the vestibular nerve which is manifested by a decreased sensitiveness, is the complete cessation of its function, i. e., the total exclusion of sound.

It was these isolated exclusions of the vestibular nerve, which more than anything else, governed the clinical picture post salvarsan, and they were doubly interesting because such diseases of the nerve are extremely rare. In order not to repeat myself I take the liberty of calling your attention to my article upon this subject in the special publication in honor of Professor Urbantschitsch.[14] Five such cases have thus far been known in lues which was not treated with salvarsan—(Bondy 1, Neumann 1, Bárány 1, Beck 2), and a sixth case, published by Haike and Wechselmann[15] has recently been added.

But not only from a luetic basis but also because of other etiological factors, such diseases are very rare. Of course the objection might be raised that the diagnosis of this affection has only been possible in the last few years and is an achievement of the most modern otology.

But a disease which proceeds with such violent manifestations as does an attack of Meniere's disease and which is so extremely painful for the patient, could not well be overlooked, though it might be wrongly diagnosed; I am of the opinion that the examining physician did not think of an otogenous etiology. But the syphilid specialist, more than anyone else, should find such occurrences not uncommon incidents in the course of lues. Ruttin, too, who sought to find the symptom complex of isolated retro-labyrinthine exclusion for an entire year, met with this form of the disease only once in an interne section during this period.

But since we subject almost all patients who are thought to be suffering with cerebral or cerebellar disease to an aural examination it is hardly to be supposed that any considerable number of such cases have escaped observation, even though the interne or the neurologist had not thought of a labyrinthine disease as the source of the trouble.

Therefore the aggregate appearance of vestibular affections in

connection with the salvarsan treatment could not fail to impress us unfavorably.

In cases of complete exclusion of sound I should like to distinguish between those forms which attack (a) the vestibular nerve only; (b) the vestibular nerve simultaneously with other cerebral nerves in which case the cochlear and facial nerves are especially concerned.

(a) THE VESTIBULAR NERVE ONLY.—The first four cases which I examined had in common the affection of the nerve co-incident with the appearance of the Jarisch-Herxheimer reaction of the skin, and for that reason Urbantschitsch and Ehrlich[16] assumed that there were analogous reactions in the region of the eighth nerve and explained the temporary loss of the nerve function by compression.[17]

All four patients had received intra-muscular injections. In a fifth case the loss of hearing appeared after the intravenous application.

It was the case of a ten-year-old girl with whom the infection had been extra-genital. At noon an intra-venous injection of salvarsan was made by Dr. Mucha at the Finger clinic. Six hours later the child complained of unbearable vertigo and of nausea and could not raise herself from the bed. The aural examination resulted in the finding of an isolated exclusion of the vestibular nerve of one side with its typical symptoms. The next day the patient felt entirely well. was quite free from vertigo and the vestibular apparatus reacted in the usual manner.

The histories of the sixth and seventh cases, which were also treated intra-venously, are exactly the same. These cases may be classified with the third group which has previously been described. The stronger reaction upon the vestibular nerve would accordingly be an expression of the greater effect of salvarsan upon the luetic organism, whereby the irritative-inflammatory processes which occasionally occur in the hg-treatment—consisting, according to Toynbee, chiefly in hyperemia, according to Moos in small-celled infiltration[18]—reach their maximum in the arseno-therapy.

On the changes which take place in the vestibular nerve alone and in the vestibular- and cochlear-apparatus simultaneously several weeks after the injection of salvarsan, I will report at another place.

But permit me, gentlemen, to make the following observation, which is, I know, only a theory and in proof of which I can offer only clinical data but no pathologic-anatomical facts or histological findings..

It would seem that the vestibular nerve in a number of cases represented a particularly fine re-agent for the action of anti-luetic preparations.

In the case of inunction treatments I have almost never heard the patients complain of a feeling of dizziness, of equilibrium disturbances, etc.; with injection of insoluble hg-salts vestibular manifestations are extremely rare. The patient of whom I have already spoken had, at the time of the vestibular disturbances, in spite of absolutely correct care of the mouth, a case of stomatitis mercurialis as an expression of the strong effect of the insoluble salts upon his organism.

In using soluble hg-combinations, differences in the galvanic excitability may be proven objectively probably representing a decreased sensitiveness of one vestibular nerve. When salvarsan, which gives the quickest results, is used, the decreased sensitiveness becomes complete exclusion of sound.

It is evidently here a question of differing degrees of intensity of one and the same process of irritative inflammation, which reaches its minimum when insoluble hg-salts or inunctions are used, its maximum when salvarsan is injected.

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## SOME EARLY BOOKS ON THE EDUCATION OF THE DEAF.*

BY FRANCIS R. PACKARD, M. D., PHILADELPHIA.

There are in ancient history several accounts of deaf-mutes who were educated so that they could communicate with other persons and understand them.

Jerome Cardan is generally regarded as the first author who stimulated interest in the study of deafness by his writings, but the first man who appears as a practical teacher of the deaf was Pedro de Ponce, or Ponce de Leon, a Spanish monk of Sagahun, who instructed with wonderful results a large number of pupils. He was born in 1520 and died in 1584.

Juan Pablo Bonet wrote the first treatise on the art of teaching the dumb to speak. It was published at Madrid in 1620, three years prior to his death. It is said that he used signs and manual alphabet in the beginning, and then depended mainly on writing and articulation. It is probable that Bonet was the priest whom Sir Kenelm Digby refers to as the instructor of the Spanish deaf lord that was exhibited to him in Spain. A contemporary and countryman of Bonet was Ramvirez de Carion, who was also a successful instructor of the deaf.

Dr. Seiss, (Children of Silence, Phila., 1887) states that in France there was a deaf-mute school conducted at Amiens in 1746, by one Etienne de Fay, who was himself deaf from birth. A Portugeese, Roderiguez Pereire, taught the deaf in France in 1749 and was given a hearing before the Royal Academy of Sciences in Paris, which reported favorably of his work. In 1760, Abbe de l'Epee began his work in the education of the deaf and dumb. He established a seminary for their gratuitous education, in which he was aided by Abbe Sicard, who carried on the work after de l'Epee's death. De l'Epee and Sicard used a manual method, although they also used as an auxiliary the oral method.

The first book which I wish to show is, so far as I am aware, the earliest publication in English dealing with an oral method of instruction for deaf-mutes. It is entitled "Philocophus: or the Deafe and Dumbe Mans Friend. Exhibiting the Philosophical verity of that subtile Art, which may inable one with an observant Eie, to Heare what any man speaks by the moving of his lips. Upon the same ground, with the advantage of an Historicall Ex-

*Read at the Meeting of the American Otological Society, June 27, 1911

emplification, apparently proving, That a Man borne Deafe and Dumbe, may be taught to Heare the sound of Words with his Eie, and thence learn to speake with his Tongue. By I. B. surnamed the Chirosopher. Sic canimus Surdis. London. Printed for Humphrey Moseley, and are to be sold at his shop in Pauls Churchyard, 1648."

Bulwer had previously published a book entitled "Cheirologia; or the Naturall Language of the Hand," from which circumstance he derived the surname "Chirosopher."

The Deaf and Dumbman's friend is made up of several parts. Following the dedications and introduction we find: "A Table of such hints and notions as more directly concern Deafe and Dumb men." These have the appearance of being notes or jottings, which the author used, or intended to use, in elaborating lectures or instructions for the pupils in the academy which he thought should be established for the instruction of the deaf and dumb. Many of these "hints and notions" have a very modern sound, thus, "Why Deafe men beget Deafe children," "Why the children of Deafe men are not always Deafe. "The causes why many in a Family prove often times Deafe and Dumbe, very dark and obscure." "Why those who are borne Deafe are consequently Dumbe." "The chief signe to distinguish naturall Deafenesse, from that which happens through a disease." "That Dumbe folks, when they are angry, will make a very great gabling noyse." "The sad and lamentable condition of those, who are borne Deafe and Dumbe." "The sadder condition of those who are Deafe and Blinde." "The yet more miserable condition of those who are Deafe, Dumbe and Blinde."

The second part of the treatise is a very learned and elaborate discussion of language and utterance. The third part begins by quoting the description by Sir Kenelm Digby of a Spanish lord whom he had seen while in Spain with Prince Charles, who, although a deaf-mute, had been taught to understand and express himself so well that he could interpret by reading the lips the sounds of a foreign tongue, and render them back with great accuracy. The conclusion of Bulwer's work is devoted to a minute analysis of Digby's narrative in which he places the most implicit confidence, explaining at length the reasons why such a phenomenon could be brought about.

The second book which I show is, "Alphabeti verè Naturalis Hebraici brevissinis Delineatis. Qua simul Methodum suppedirat, juxta quam qui surdi nati sunt sic informari possunt ut non alias

saltem loquentes intelligant, sed ipsi ad sermonis usum perverniant. In lucem edita à F. M. B. ab Helmont. Sulzbaci, Typhis Abrahami Lichtenthaleri. A. D. 1657."

The sub-title being translated reads, "Illustrating the method by which deaf-mutes may not only understand each other, but may also themselves speak." This little work in Latin contains an exposition of an oral method, which, in a primitive way, is based in many particulars on the principles and facts used at the present time. The frontispiece represents the author studying and delineating the position of the lips in utterance. At the end of the book are some thirty illustrations representing the various positions assumed by the lips and tongue in articulation; also some pictures of physical apparatus employed in the author's researches.

This copy of Helmont's book is from the Library of the Abbe Fauvel. Helmont was a Dutchman, and in 1692 John Conrad Amman, a Swiss physician, practicing at Amsterdam, educated a young deaf girl of Haarlem so that she could speak and understand conversation. According to Seiss (Children of Silence), in 1692, he published an account of his method entitled, "Surdus Loquens," which was republished in an enlarged form in 1700, under the title, "Dissertatio de Loquela," and was later published in English.

The third book bears the title, "Didascalocophus; or the Deaf and Dumb Man's Tutor—to which is added A Discourse of the Nature and Number of Double Consonants: Both which Tracts being the first (for what the author knows) that have been published upon either of the Subjects. By G. Dalgarno. Printed at the Theatre in Oxford—A. D. 1680." A picture of the Sheldonian Theater, Oxford, illustrates the title page.

The author was a grammarian and his book is full of the distinctions and rules which rendered so complex all the grammars of his day. He deals with the manual method of speech, explaining his method of teaching it and suggesting its defects, especially the fact that those with whom the deaf man wishes to converse must also know chirology, as the author terms it. He then proceeds to consider the feasibility of an oral method of conversation for the deaf, which in many respects presents a crude prevision of the methods employed in the oral instruction of the deaf to-day. Dalgarno certainly grasped many essential facts. Thus he states, "That a Deaf man may be taught to speak, is no more a doubt to me, than that a Blind man may be taught to write." Again in his Chapter IV, "Of a Deafman's Capacity to understand the speech of others," he says, "That words might be gathered, and read from

the transient motions, and configurations, of the mouth (if all the several distinctions of letters, were no less manifest and apparent to the Eye, than to the Ear from the speaker's face) as readily as from permanent characters upon paper, is not to be doubted."

He proceeds, however, to reject the oral method because, he states: "But that all the distinctions that are perceived by the Ear in speaking, cannot equally be perceived by the Eye; I will prove by an argument, which though it be a Posteriori, yet I hope it will be of evidence and force sufficient to effect what is thereby intended. If the same distinction of letters and words did appear to the Eye from the motion of the speaker's mouth, which are discernable to the Ear from the articulation of his voice; then it would follow, that the capacity of a Deaf man would be equal to that of a Dumb (but not Deaf) for learning a language, so far at least as to understand it. But the capacity of a Deaf man is not equal to that of a Dumb for hearing a language from speaking. Therefore all the distinctions of letters are not manifest to the Deaf man from the speaker's mouth."

He quotes Sir Kenelm Digby's story of the "Spanish Deaf Lord," who was "able not only to know strange letters in strange languages, instantly; but also to be able to imitate them, though he had never been taught," and states his disbelief in it. The author then goes on to declare his belief that the "Diligent Hand" of the tutor is the greatest engine in bringing relief to the deaf. Dalgarno makes no reference to any previous work on the subject.

Another early English book on the instruction of the deaf is, "The Deaf and Dumb Man's Discourse, or a Treatise Concerning those who are Born Deaf and Dumb, containing a Discovery of their Knowledge or Understanding; as also the Method they use. to manifest the sentiments of their mind. Together with an Additional Tract of the Reason and Speech of Inanimate Creatures. By George Sibscota. London, Printed by H. Bruges, for William Crook at the Green Dragon without Temple Bar, 1670." This little book is in the nature of a philosophical discourse and does not treat the subject in any of its practical aspects. The copy which I hold has many notes in manuscript concerning ear-trumpets.

Lastly, I show a copy of the famous book of l'Abbe Charles Michel de l'Epee entitled, "La Veritable Maniere d' instruire Les Sourds et Muets, confirmée par une longue experience—Par M. l'Abbe, Instituteur des Sourds Muets de Paris. Paris, 1784."

304 South Nineteenth Street.

## CARCINOMA OF THE NASO-PHARYNX.

BY C. M. BROWN, M. D., BUFFALO.

E. S., aged 49 years, superintendent of a rubber reclaiming works. The family history was negative. He himself had always been in good health until about six months ago, when he noticed a gradually increasing weakness accompanied with a steady loss in weight.

Pain of constantly increasing severity, principally in the left temporal region, soon developed.

On December 28, 1910, he had watery discharge from the left ear. This continued for about one week, when it suddenly stopped. It was not accompanied by pain, but the patient did notice a considerable loss of hearing from which he never recovered.

I first saw the patient on February 26, 1911. He complained of the above symptoms and of a yellow discharge from the nose and throat, of a bad taste in his mouth and that his friends noticed that his breath was very offensive. Upon nasal examination a profuse purulent discharge was noticed in the inferior meatus on the left side. This discharge was seen to be coming from underneath the middle turbinate. The maxillary sinus was washed out and a large amount of foul secretion obtained; pus did not appear in the middle meatus again after one hour.

Further examination of the nose showed a marked deviation of the septum to the right with concavity to the left; also ridge extending back to the sphenoid. Post-nasal examination showed a large cauliflower-looking mass almost completely filling the post-nasal space. Upon more careful examination this mass was found to spring from the vault of the pharynx, principally upon the left side. Microscopical examination of a section of the tumor-mass showed it to be a squamous-celled carcinoma.

The subsequent history of this case is interesting, in that the progress of the disease was so plainly marked. April 3, the patient complained of numbness of the left side of the face; about four days later anesthesia of the parts supplied by the ophthalmic branch of the fifth nerve was nearly complete. April 18, upon awakening, the patient noticed double vision, and three days later ptosis was observed on this left side. On April 20, ptosis was complete. Death occurred May 6, the result of meningitis.

158 North Pearl Street.

# SYLLABUS FOR A LECTURE TO MEDICAL STUDENTS ON THE DEAF CHILD.*

BY G. HUDSON-MAKUEN, M. D., PHILADELPHIA.

### DEAFNESS IN CHILDHOOD.

Deafness, the natural condition of early infancy. Hearing an acquired faculty developed during the second, third or fourth months. Refinements of hearing largely a matter of education.

### DIAGNOSIS OF DEAFNESS.

Positive diagnosis of deafness exceedingly difficult, especially in the first, and sometimes even in the second and third years. Tests for hearing-power best made behind the child's back, in order to eliminate the faculty of seeing. Concealed bells and whistles of various degrees of loudness may be used. Muteness oftentimes the first indication of deafness.

### DEAF-MUTISM.

CLASSIFICATION: — Congenital — Acquired. Congenital deaf-mutism occurs in those born with no potentiality for hearing. Acquired deaf-mutism the result of post-natal affections of the organs of hearing, arising from either peripheral or central inflammatory conditions which usually extend to the labyrinth. Deaf-mutism acquired after the development of speech results in a class of so-called semi-mutes, or those who have some remnants of automatic speech remaining although the hearing may be entirely lost. Neglected deafness acquired as late as the sixth, seventh, or even eighth year may result in dumbness.

### DIAGNOSIS OF DEAF-MUTISM.

Muteness not pathognomonic of deafness; other possible causes being, a faulty development of the psycho-motor or kinesthetic areas of the brain, and certain forms of paralysis of the peripheral organs of speech due to a faulty development of their motor centers in the bulb and spinal cord. The character of the speech an index to the character of the hearing; defective speech generally denoting defective hearing. Partial deafness may be suggested by the omis-

*Note: Prepared at the request of a special committee appointed by the American Otological and the American Laryngological, Rhinological and Otological Societies to improve the methods of medical teaching with reference to deaf-mutism, and authorized to be sent to the faculties of the various medical schools throughout the United States and Canada.

sion of certain sounds of speech. Mutism not necessarily accompanied by absolute deafness. Slight deafness may result in mutism when the mentality is not of high grade.

PHYSICAL CHARACTERISTICS.

Physically, the deaf child differs from the normal child only in respect to the conditions which cause the deafness. The brain of the adult deaf-mute, however, may be somewhat smaller than the average brain, and the respiratory organs may show some lack of development on account of their relative inactivity.

PSYCHICAL CHARACTERISTICS.

The mental operations of deaf children who are taught to speak, differ in no essential respects from those of hearing children. The natural sign-language, or the acquired manual or finger-language, not adequate to precision or rapidity of thought, and requiring the use of different parts of the brain. Speech distinguishes man from the lower animals and is absolutely necessary to the highest psychical development. Lower animals have a language of their own, but they cannot speak. Deaf-mutes who have not learned to speak are mentally of higher grade than the lower animals because of their inheritance and of their greater powers of expression. During the first year, or prior to the period of beginning speech-development, congenital deaf-mutes differ but little mentally from normal children. Deaf-mutes who have learned to speak and to understand speech by the modern methods may be but little if any handicapped mentally by their deafness, because the only necessarily undeveloped cerebral area is that employed in audition, the visual and tactile areas being specially trained to take its place.

PATHOLOGY.

Pathology of deaf-mutism not well established on account of the difficulties in getting accurate clinical histories combined with adequate post-mortem findings. Arrested development of the auditory centers of the brain not easily distinguished. Evidences of pre-existing middle and inner-ear diseases frequently found.

ETIOLOGY.

Heredity an important factor. The affection may skip one or more generations to appear in a later one. The intermarriage of deaf-mutes, and even of hearing persons having a deaf-mute ancestry should be discouraged. Labyrinthine disease, whether originating centrally or peripherally, the most frequent direct cause of deaf-mutism. Cerebro-spinal meningitis, measles, scarletina, and

typhus fever frequently followed by deafness. Inflammatory conditions of the middle-ear, so common in infants and sometimes resulting in extensive destruction or ossification of the contents of the tympanic cavity, are also causes.

PREVENTION.

Prevention of deaf-mutism entirely possible in many instances. Modern advances in otology not sufficiently utilized in the treatment of very young children. This is a field almost wholly unexplored by the specialist. Inflammatory conditions of the middle-ear at birth, the rule rather than the exception, and many children having acquired deafness during the first year are classed as congenital deaf-mutes.

The prevention of deaf-mutism consists in a vigorous, scientific treatment of the early causes of deafness, and it should, of course, be conducted by the experienced otologist. Such skilled medical attention would probably greatly diminish the number of deaf-mutes.

TREATMENT OF DEAF-MUTISM.

MEDICAL:—Deaf-mutism being a condition following deafness of varying degrees and from numerous and diverse causes, requires, first of all, the attention of the skilled otologist. The amelioration of the deafness, and even a cure of the deaf-mutism, in the first two or three years among the possibilities. Prompt attention to middle-ear diseases of all kinds, and to all symptoms and diseases referable to the ear. The development of increments and zones of hearing by the use of musical instruments; by tuning-forks, as suggested by Bezold; and by the use of the speaking-voice in close approximation to the ear as practiced by Urbantschitsch, myself, and others.

PEDAGOGICAL.

The education of the deaf-mute should begin with early infancy. Training of the special senses. The training and development of latent hearing-power especially useful in the production and modulation of the voice. The sense of touch easily developed in childhood and quickly lost if not practiced. Kinesthetic areas of the brain of great importance to the deaf in the acquirement of satisfactory phonation and articulation. The training of the visual sense for lip- or speech-reading also of great importance. The desirability of encouraging the babbling and prattling of deaf infants, and of talking to them as if they could hear. Early neglect and undue sympathy the greatest obstacle to success. All this

practicable during early childhood and in a well-conducted home. An intelligent mother or governess, with a little instruction from the physician or teacher, may save bright deaf children from the stigma of muteness. Many deaf children found in ill-conducted homes, and hence, the desirability of special institutions for their early education. Differences of opinion as to whether the deaf who have learned to speak should be educated together with or apart from their hearing fellows. The possibility of exceptionally bright children progressing satisfactorily in schools for the hearing, and the impossibility of any but the exceptionally bright accomplishing this task. The teaching of phono-articulation and lip- or speech-reading to the deaf, a difficult procedure and requiring enthusiasm, patience, knowledge, and skill. Success in the work dependent largely upon the teacher's ability to arouse interest on the part of the patient. Helen Keller's remarkable success due in great measure to her great desire and determination to speak.

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Schools for the Deaf in the United States. See THE LARYNGOSCOPE, December, 1910.

1627 Walnut Street.

# PRESERVATION OF THE ANTERIOR WALL IN THE EXTERNAL FRONTAL SINUS OPERATION.*

BY THOMAS J. GALLAHER, M. D., DENVER.

External frontal sinus operations have been rather numerous. The older ones consisted in the removal of more or less of the anterior wall, with or without enlargement of the fronto-nasal canal. In some instances the sinus was packed and healing by granulation established. Instead of removing the anterior wall an osteoplastic flap has been used by some operators.

All of these operations are open to the objection that the ethmoidal cells are practically ignored, and re-infection may occur, or more or less deformity may result. Where the osteoplastic flap has been employed the deformity is obviated.

It remained for Killian to devise the most satisfactory external operation for frontal sinus suppuration. By means of this procedure the ethmoid cells are obliterated, a large permanent opening established into the nose and all debris removed from the sinus.

A varying degree of deformity results from the removal of the anterior wall in the Killian operation and it has been suggested by a few operators that the anterior wall be preserved, while the operation below the arch is done precisely as Killian recommends.

The question now arises as to whether the sinus can be sufficiently curetted from below. This depends upon its size and contour. I am convinced after investigations on the cadaver as well as on the living that it is by no means always necessary to remove the anterior wall to satisfactorily curette the sinus.

In suppuration of the sphenoidal sinus and antrum it must be admitted that most cases recover upon establishing thorough drainage and ventilation and the question of curettage must depend upon the condition of the membrane, the presence of granulations and polypi. The indiscriminate removal of the mucous membrane is to be deprecated. These facts obtain also in regard to the frontal sinus.

It seems to us that the lower portion of the Killian operation should be first performed, preserving the anterior wall unless it is found impossible to satisfactorily remove the debris from the sinus from below.

*Read before the meeting of the American Laryngological, Rhinological and Otological Society, Atlantic City, June 1, 1911.

Of course the X-ray photograph should be used previous to operation to determine the size and contour of the sinus. We have been able to find but few cases reported in which any effort had been made to preserve the anterior wall.

We have performed six external operations in which the anterior wall has been preserved and the procedure below the arch was a typical Killian. It was our intention in case this should fail to cure to re-operate and remove the anterior wall, but we did not find this necessary. The thoroughness of the resection below the arch is in no way impaired by keeping the anterior wall of the sinus intact.

There are three prime objects in performing the frontal sinus operation: 1. To remove all diseased tissue. 2. To establish permanent drainage. 3. To insure ventilation of the cavity.

The lower operation gives drainage and ventilation without question. The debatable point is whether the debris can be removed sufficiently to insure cure. Even with the removal of the anterior wall it is sometimes impossible to remove every vestige of granulation-tissue, but this quickly shrivels under the influence of air.

It cannot be doubted but that the removal of the anterior wall is necessary in some cases, but certainly less often than is now generally done. It is an advantage to have as large an opening into the nose as possible, and it is necessary to prevent excessive granulations.

Many of the indifferent results in the Killian operation are no doubt due to lack of sufficient after-treatment. In some cases gauze should be packed intra-nasally into the opening of the sinus and nitrate of silver occasionally applied as conditions demand.

We will not burden you with a detail of cases, but suffice it to say that the results in these six cases have been so satisfactory that we feel warranted to continue in our effort to preserve the anterior wall.

606 California Building.

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**Headache and Nasal Obstruction.** CHAVANNE. *Arch. internat. de Laryngol. d'Otol. et de Rhinol.*, Jan., 1911.

Report of a case in wh ch the headache entirely disappeared after cauterizing the nose to relieve a bilateral hypertrophic rhinitis.

ED.

# PRIMARY CHANCRE OF THE TONSIL.*

BY A. B. THRASHER, M. D., CINCINNATI.

I have long been impressed with the idea that members of the medical profession at large have made many serious mistakes by regarding syphilis as only a venereal disease. Dr. Delavan has said before this society that the sooner the profession recognizes that syphilis is not merely a venereal disease, the better for all. Dr. Griffin (*American Journal of Dermatology*, 1906) even goes so far as to say that syphilis is no more a venereal disease than is tuberculosis, and especially can this be said of the primary disease of lips, the tongue or fauces.

Not long since in reporting some cases of chancre of the lips and fauces I was convinced that many cases are overlooked because of the innocence of the patient. Certainly not all sore tonsils are seen by expert specialists. It will never be known how many cases of chancre of the tonsil have been unrecognized until general symptoms were present and then the initial lesion had disappeared and been forgotten. While this paper may not present anything new to you it may serve to remind you that primary infection of the tonsil occurs, and in many cases it is recognized either with difficulty, or, not at all.

Primary syphilis of the tonsil was first described by Ricord in 1838. Since then numerous cases have been reported although many practitioners of large experience have never seen a case. Rollet in 1859, reported four cases of tonsillar chancre in one family. The first detailed report of such cases, however, was made by Diday, in 1861. Of 198 extra-genital primary affections, according to Pospelow, 46 were tonsillar. There is a very great diversity of opinion as to the relative frequency of tonsillar affection. This difference varies from 1 per cent to 75 per cent of extra-genital chancres on the tonsil. Rosenquist reports as treated in the Hospital of Mjassnitski, Moscow, 354 extra-genital primary affections, 179 or 55.6 per cent of which were tonsillar.

Stiebel reported 50 cases of extra-genital initial lesions treated in the Joseph Policlinic of which three, or 6 per cent were tonsillar. Domcan Bulkley, according to Hellwig, has compiled statistics from many countries of the relative frequency of tonsillar chancre com-

*Read before the Meeting of the American Laryngological Association. Philadelphia, May 30, 1911.

pared with other extra-genital initial lesions. These varied from 1.4 per cent in Germany and Holland, 3 per cent in United States, 5 per cent in France, 8 per cent in Belgium, to 19 per cent in Denmark, Sweden and Norway. Morell Lavallee observed in Fournier's Clinic in one year, 45 extra-genital primary lesions, only one of which was tonsillar.

This very wide variation in observation of the comparative frequency of tonsillar chancre would indicate that it is a rather rare condition. When we consider the number that must have been overlooked, or not recognized, perhaps about 20 per cent of all extragenital chancre are tonsillar. If, however, we confine ourselves to considering only initial lesions of the pharynx then we find that nearly all of them are on the tonsil.

Hopman reports 428 lesions of the tonsils out of 509 pharyngeal infections. Sandziak found 16 per cent of tonsillar scleroses among 3,767 of the lips, mouth, pharynx, nose and ears. Sabolotzky in the Mjassnitzky Hospital reports 139 cases of extra-genital syphilitic infection in one year, of which 104, or nearly 75 per cent were tonsillar. Neumann, of Vienna, reports that among 4,634 luetic patients visiting his clinic from 1880-1901, 207 had primary extragenital infection and of these 20 were tonsillar lesions. Sabolotzky regards the tonsil as first in frequency of infection among extragenital lesions. Senziak gives it the second place. Pospelow ranks it as third, while according to Muenchheimer, who has published statistics of a very large number of extra-genital infections, that of the tonsil ranks fifth in frequency.

On the other hand, Gay observed only two cases of primary tonsillar infections in twenty-four years, and Protseck, at the Breslau Clinic, saw but one case among 93 extragenital chancre in twelve years.

According to French authors, the male sex is more frequently affected than the female. Among the Germans and Russians the female is more frequently affected. Pospelow says that aside from coitus per os, woman as a mother, nurse, cook or servant is more exposed to infection than man. Kaesbohrer says that different customs in different countries may account for the difference in affections of the two sexes.

By far the most frequent cause of tonsillar infection is the virus conveyed by kissing. In the four cases falling under my notice three were contracted in this way. Mucous patches on the lips or on the tongue would easily introduce the contagion into the mouth where it would readily lodge in the tonsil. Especially is this danger

present where kissing is accompanied by the introduction of the tongue in intensive, passionate osculation. By this means the virus can readily be conveyed to innocent persons with no thought of danger by either party. In the fourth of my cases the virus was coughed into the face of the physician who was treating a patient for luetic sore throat, a tonsillar chancre being the result. One case is reported of a physician who attempted to resuscitate a newly-born asphyxiated luetic child by applying his mouth directly to that of the child and attempting to thus inflate the lungs. A tonsillar chancre followed in due order.

Perverse sexual intercourse, coitus per os, is often given as a cause. Dr. Max Thorner gave this as the acknowledged cause of infection in a case he reported to the Cincinnati Academy of Medicine. Kaesbohrer, however, found this to be a rare method of infection and he was able to trace only seven cases to bestial practice. Bruhns (*Berliner klinische Wochenschrift,* 1900) says that only rarely is hard chancre of the tonsil acquired by pervert coition, the usual method being from kissing or from eating- or drinking-utensils. Infection has been attributed not only to imperfectly cleansed eating and drinking vessels and utensils, but to pipes, cigars (the cigar-maker moistening the end of the wrapper with luetic saliva), lead-pencils (from the common habit of placing the end of the pencil in the mouth), nails, glass blowers' blow-pipe, tooth-brush, even one case from the use of a syphilitic relative's tooth-powder, rubber nipples, a child from the nipple of a luetic nurse. The infection has been attributed to imperfectly sterilized instruments, as a tonsillotome or Eustachian catheter.

The first symptoms of primary syphilitic infection of the tonsil are exceedingly insiduous. A sensation of first irritation and then pain is usually what directs the patient's attention to his throat. Slowly the throat grows worse until there is pain on deglutition, radiating toward the ear of the affected side. There is generally no marked rise in temperature although in mixed infection there may be chills, fever and general feeling of illness. When the physician is consulted there is usually seen a swollen red tonsil, on which is a gray ulcer surrounded by a zone of indurated tissue. At times there is no ulceration, only a hard, swollen tonsil. The cervical lymphatic glands are found to be involved. Of these, the sub-maxillary are the most frequently affected; then the other anterior cervical glands and finally the mastoid and posterior cervical glands become enlarged. These enlarged glands are usually indolent, although occasionally they become painful and finally fluctuate

and even suppurate, acting quite like the inguinal glands in chancre of the penis. As a rule, the affection involves but one tonsil when the unilateral swelling of the tonsil and faucial pillars presents a characteristic picture. The tonsil is red, swollen, more or less ulcerated, firm or hard to the touch and usually very sensitive to any manipulation. The ulcerated area is covered with a dirty, grayish secretion and is surrounded by, and super-imposed upon, the mass of sclerotic tissue. The inflammation may be so severe as to cause a great destruction of tonsillar tissue, like that, for example, produced by a cancerous growth. When the tonsil is primarily infected, the constitutional or so-called secondary manifestations appear earlier than usual. So certainly is this true that the physician who is first consulted for the sore tonsil can, as a rule, find secondary lesions already present. So not infrequently the examining surgeon can thus early confirm his diagnosis by macroscopical inspection. If no constitutional symptoms are present, then the microscope may detect the spirochete, or the serum-reaction may be positive. Where, however, the affection is strictly confined to the tonsil, the sero-diagnostic test is uncertain. (Gaston & Giraul. *Bull. Soc. fr. de dermat, et de syph.*, 1908).

Differential diagnosis may at times present difficulties. In acute tonsillitis we should have more rapid rise in the inflammatory symptoms, more fever, a more extensive involvement of the faucial tissues, numerous small glands suppurating and general symptoms of an acute rather than of a chronic disease. The rapid course of the simple acute pharyngitis would soon decide the diagnosis.

The greyish membrane is somewhat like the diphtheritic membrane in appearance. But in diphtheria there are the marked constitutional symptoms with a rapid growth of the membrane over different parts of the throat, not being confined to one tonsil. It is true that the involvement of the cervical glands which is absent in simple pharyngitis is present in diphtheria, yet not to the same extent as in syphilis. Diphtheria attacks the mucous membrane of the entire throat, while the chancre is generally unilateral.

A broken-down gumma may be mistaken for a hard chancre. In the gumma, however, we do not have so much pain, neither is there the red, tense mucous membrane over the tonsil. Then with the gumma we do not find the marked cervical adenitis present with the chancre, neither do we have pain in deglutition or on pressure. From secondary syphilis the difference is more marked. Here we generally have bilateral lesions and if a phagedenic ulcer

is present on the tonsil the base is not so much indurated nor are the sub-maxillary or cervical glands so much affected.

In tuberculosis, other symptoms are usually found. The surrounding mucosa is pale and the cough is distressing. In cases of doubt, the microscope will quickly differentiate.

When, however, there is a mixed infection of both syphilis and tubercle mistakes in diagnosis are frequent. Then the microscope may reveal both infections on the same slide. The entire body must be inspected and even then the outcome of treatment may be acquired to clear or make sure the diagnosis.

Cancer of the tonsil is probably more nearly simulated by hard chancre than any other affection. The age of the patient is usually an important diagnostic point. Cancer progresses more slowly, bleeds more readily, is not so painful on manipulation. Time and the results of treatment settle the diagnosis. Sarcoma is more apt to be confused with a gumma, as a very short time would differentiate it from a chancre.

The course of a primary syphilitic affection of the tonsil is more rapid than in other parts. Before the general infection, of course, the serum test would be without value. So rapid, however, is the spread of the disease that rarely does a patient consult a physician for the sore throat before symptoms of constitutional infection can be found.

There are some points in treatment that we, as specialists, may be called on to decide. If seen early, before any constitutional symptoms are manifest, it appears to me that the patient should be given the benefit of a radical tonsillectomy. Every precaution should be taken to prevent infection of the raw surface, both before and after the operation. In my judgment, there is a chance for the complete removal of the contagion by the early and thorough operation.

Of course, if all tonsils were thoroughly removed from children, this source of infection would not exist. The next best thing would be immediate tonsillectomy in such cases as are seen before the serum test indicated a general spread of the disease. Aside from the surgical treatment, other remedies, such as mercury and arsenic should be employed not differently from their use in other primary lesions.

Groton Building.

# RETRO-PHARYNGEAL ABSCESS WITH PARALYSIS OF THE ESOPHAGUS.*

BY JOHN A. THOMPSON, M. D., CINCINNATI.

Frank C., aged 19 years, is a healthy well-developed farmer's boy, accustomed to the open-air life and labor of an Indiana farm March 5, 1911, when he sat down to his evening meal he found he was unable to swallow any portion of it. There was no history of any definite illness before this time, although he had some malaise. This was not severe enough to prevent his attending school and doing the usual winter "chores" around the farm. This inability to swallow continued for one week before I saw him. It was complicated by severe attacks of cough and dyspnea. These attacks were excited by the accumulation of mucous and saliva in his throat that he was not able to expel. The voice was never impaired. The case was reported to me as having had an afebrile course, although the temperature was 100° F. and the pulse 140, when I first saw him at his home, April 1. Direct examination of the nose showed a pale membrane with shrunken turbinates. The appearance was such that a provisional diagnosis of atrophic rhinitis was made. Later observation proved this to be an error, as the appearance was due to a lack of fluid in the blood-vessels, since he had swallowed nothing for eight days. The tonsils were enlarged. The tongue and pharynx were normal except for the pallor of the membrane. Post-rhinoscopic examination showed a mass of inflamed adenoid tissue in the naso-pharynx. The appearance of the larynx was normal, with no impairment of the respiratory or phonatory movements. In attempting to palpate the naso-pharynx to determine if fluctuation be present, the examining finger broke through the inflamed adenoid tissue into a distinct cavity. Some blood and pus flowed through the nose, but not a large quantity. The next morning the patient's temperature was 97°, pulse 144, very weak and so small that it was difficult to count. It was twenty-four hours more before I could overcome the fear of the attendants and induce them to feed him with a stomach tube. His previous attacks of dyspnea had been so severe they were afraid of a fatal attack when the tube was passed. The passage of the tube caused no distress and the patient was given milk and eggs four times daily. In a week he

*Read before the meeting of the Cincinnati Academy of Medicine, 1911.

had learned to pass the tube himself. In three weeks he could swallow and his further recovery was rapid. September 7, I removed the adenoids at my office, under cocain anesthesia.

We expect difficulty in swallowing in a retro-pharyngeal abscess in its usual location in the oro-pharynx. An abscess under a mass of adenoids, causing paralysis of the esophagus, has been seen by the writer only once in twenty-seven years of throat-work.

628 Elm Street.

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**The Opening of the Cranial Cavity and Exposure of the Brain by Way of the Nasal Accessory Cavities.** A. Onodi, *Ztschr. f. Laryngol., Rhinol. u. ihre Grenzgeb.*, Bd. 4, Heft 1, 1911.

In this article the author publishes 132 original illustrations of most interesting and rare anatomical specimens of the nasal accessory cavities. By projecting the X-ray tracing of the different nasal cavities upon the pictures of adjoining and remote important cranial structures he defines the way for attacking the latter through the accessory cavities. Thus after performing the Killian radical operation of the frontal, ethmoidal and sphenoidal cavities, the floor of the anterior cranial cavity and the inferior surface of the lobus frontalis may be easily exposed. Similarly from both the frontal and ethmoidal cavities one may reach the region of the optic nerve, subdurally. Explorative puncture of the brain may be done through the frontal sinus above the floor of the anterior cranial fossa, but the needle must not be introduced deeper than eighteen millimeters, otherwise the lateral ventricles and the cerebral ganglia are liable to be injured. A beautiful series of illustrations denotes the anatomical relationship between the sphenoidal cavity and hypophysis; the different methods of reaching the latter through the former are fully discussed. Notwithstanding the close apposition of the optic nerve, the carotid artery and the cavernous sinus to the sphenoidal cavity, these structures will never be injured, if the hypophysectomy is performed near the median line. The adoption of these improved methods of attack will enable the rhinologist to successfully cope with certain difficult brain complications arising from nasal conditions. Glogau.

## UNUSUAL INSTANCES OF LARYNGEAL ABSCESS.*

BY WOLFF FREUDENTHAL, M. D., NEW YORK.

Not often have laryngologists an opportunity of seeing cases of abscess of the larynx. When they do they find the arytenoids to be the parts generally affected. The underlying cause is chiefly tuberculosis, the progress of the disease in these cases being slow.

There is another class of patients, however, in whom an abscess develops without any known cause, and occasionally in a sudden and most alarming manner. These cases can be saved by an early tracheotomy. The writer had occasion to see several cases of this kind, which he believes to be of general interest.

*Case 1.* The first case to be reported was demonstrated before the New York Academy of Medicine (Section on Laryngology), May 23, 1911. I remarked at that time: The patient whom I take the liberty of presenting is Mr. R., 59 years of age. He has been in good health up to the middle of October, 1910, when he fell sick and consulted a physician. At that time the patient complained of a lancinating, sticking pain in the hard palate, the molar teeth, and the back of the head. The pain was confined to the left side only. Three days later there was quite an increase of the hoarseness which had been previously present, but as the voice had always been husky and his father was similarly affected he had paid no attention to that point. However, the pain in the back of his head and in the molar teeth continued, and he went from one physician to another, was treated for neuralgia, etc., and was finally advised to have a few teeth drawn, which was done, but without any relief. Finally dyspnea and dysphagia set in, and he was referred to me on March 14, 1911, i. e., five months after the onset of his sickness.

Examination showed nothing unusual in the pharynx but the larynx presented a picture such as might have been expected in a case of malignant tumor. There was an irregular mass on the left cord which did not move freely, almost constant expectoration and a very strong fetor ex ore. He had lost weight steadily—twenty or thirty pounds—had no appetite, and experienced difficulty in swallowing, etc. There were no signs of tuberculosis or syphilis, consequently a malignant tumor was strongly suspected.

*Read before the meeting of the New York Academy of Medicine, May 23, 1911.

A small piece was removed, but did not show any signs of malignancy, nor did the mass look like an abscess at that time. About a week later, when the patient was again seen, the appearance was somewhat changed. The movements of both cords were much restricted, which could not be explained by the presence of a tumor confined to only one side. At his next visit both vocal cords looked about the same. The picture was that of bilateral abductor paralysis. Five or six days later the whole process appeared to be in the left ary-epiglottic fold. An incision was made and the man felt somewhat better, but later the same condition presented itself as before, i. e., only the larynx was affected. He had some dyspnea and was advised to go to a hospital in order to have tracheotomy done, but refused. A little later he returned to my office one morning with decided dyspnea. The left arytenoid was much swollen, presenting a typical picture of an abscess. An incision was made, and all the symptoms improved. He expectorated a good deal of pus, and the vocal cords gradually began to move again. He was feeling very comfortable, but in a few weeks the whole process returned. On one occasion he had so much dyspnea that it was thought best to perform a tracheotomy at once. The patient, however, refused any operative intervention. The next day he vomited a great deal of pus and blood and felt much better. He has been feeling quite comfortable ever since, but there is always more or less dyspnea.

At present the best thing to do would be to perform a preliminary tracheotomy, then open the larynx and curette the abscess cavity. Some cases are on record in which trachectomy alone sufficed to drain and cure the abscess. But it is more than doubtful whether that can be accomplished in this case. V. Hinsberg, of Breslau, in an interesting paper on the surgical treatment of perichondritis laryngis (*Zeitschrift fuer Ohrenheilkunde*, p. 305 Bd. 62, Heft. 4, 1911), reports similar cases. In one of these, in which he had noticed paralysis of the postici tracheotomy was at first refused, but had later to be resorted to on the suffocating patient. The alarming symptoms as well as the dysphagia disappeared quite rapidly. There was no further retention of pus and no pressure; hence no pain in the larynx. A few weeks later the vocal cords commenced to move again.

Epicrisis. A few days after the patient had been shown to the members of the Section on Laryngology, Dr. M. Levine, his physician, was called to him during the night. He was cyanotic and the dyspnea was severe. Hot application improved the condition,

and the next morning the patient started to go to the hospital with the intention of having a tracheotomy done. On the way he was seized with a similar attack and was taken into a drug-store and from there in an ambulance to the hospital. There, with the kind assistance of Dr. H. M. Silver, I did a treacheotomy. The patient stopped breathing for a while, but was resuscitated and has felt well ever since. The discharge from the upper portions is still going on, and it would seem that a laryngotomy will have to be done after all.

*Case 2.* One morning the writer was called to attend a lady, Miss L., who had been suffering from dyspnea. On his arrival at 7 a. m. he was informed that the family physician had left at 3 o'clock with the advice that they call a throat specialist. The patient gave a history of having suffered with pain in the throat for a week, with difficulty in swallowing, etc. Her physician had made an incision in the tonsil a few days previously. The people were South Americans, very excitable, and especially so that morning. They were staying in a boarding-house, and the surroundings were not of the best.

On examining the patient, a slight swelling of the left tonsil was found and some dyspnea, which could not be readily explained. I advised the patient to go to a sanitarium, but this she refused to do. Later on the dyspnea returned, somewhat worse than before. Dr. A. Braun saw the patient and thought a tracheotomy necessary. Then they consented to her entering a sanitarium. They requested me, however, not to make an incision from the outside, if I could help it. The patient was again examined and large swellings of both arytenoids were noticed, which apparently contained pus. One of these was opened intra-laryngeally, and quite a quantity of pus was evacuated. In spite of this, breathing became worse, and using my finger as a guide and finding the arytenoid very easy I then made an incision with the knife, whereupon more pus came out freely. All of a sudden the patient stopped breathing and became cyanotic, necessitating tracheotomy within a few seconds. Fortunately, breathing was resumed, and with the tube in the trachea she felt quite comfortable for the next five or six hours, when she again had some dyspnea and said that her chest hurt her. Examination showed that the left side of the lungs was filling with pus. By inserting a needle we withdrew pus, which later on became mixed with blood, although no bleeding vessel could be found. The greater part of the mass, however, was purulent. The patient died within thirty hours.

Everyone would have advised a tracheotomy in this last case when there was plenty of time to do it, but whether that would have made any difference as to the outcome is difficult to say. The same applies to the first case, only that we were fortunate enough to save him in extremis.

The etiology in both these cases seems to be somewhat alike. Not until the death of the second patient did I learn that for a long time she had had a swelling below the ear (no aural trouble), and that she had been advised to have this abscess opened. Later on, while in New York, the swelling subsided, and it was not until its disappearance that she began to have difficulty in swallowing. From this history it is clear that the abscess on the outside of her neck ruptured into the pharynx, involved the tonsil, and from there had extended by way of the lymphatics into the larynx and further down.

In the case of Mr. R. it cannot be doubted either that he first suffered from a retro-pharyngeal abscess, though the collection of pus was so small that it escaped the notice of several physicians. Later this abscess, too, emptied itself into the larynx where it affected the left arytenoid, spreading from there in different directions.

In reviewing the literature, I found one case that in many respects resembles that of Miss C. It was reported by Dr. George C. Gage (New York Eye and Ear Infirmary Reports, p. 68, 102). A woman, 25 years of age, developed "a large swelling about the middle third of the neck, just below the right ear—a fluctuating deep abscess under the deep fascia. Voice hoarse, breathing sibilant on inspiration; temperature 103.5° F. The laryngoscope showed edema of right false cord and right pyriform sinus; larynx pushed towards the left side." Scarifications were done by Dr. Gage with relief to breathing. The next day Dr. A. J. McCosh incised the abscess externally. Five days later breathing suddenly became stertorous, due to a sub-glottic abscess. Tracheotomy was done hurriedly. Dr. Gage then opened the abscess below the cord. Six months later the woman developed a pedunculated papilloma below the right cord, but recovered after its removal.

The similarity in Dr. Gage's case and mine is striking. Mine gave a much more unfavorable prognosis, since the abscess on the outside of the neck was allowed to make its own way into the deeper tissue, while Dr. Gage's case was controlled by an incision.

Another case has been recorded which would have been very interesting and which I would have liked to demonstrate here, but

the patient died some time ago, viz., on December 11, 1799. He was no less a person than the pater patriæ, George Washington. He, too, fell ill with a pain in the upper and fore part of the throat, had dyspnea and dysphagia. All these symptoms increased rapidly and led to his untimely death within less than forty-eight hours. As the case of General Washington is deeply interesting to every American reader, I may be permitted to cite the history as given by the physicians who attended him, Dr. Elisha E. Dick and Dr. James Craik (Quoted from Horace Green: A Treatise on Diseases of the Air-Passages, New York and London, 1846, p. 32):

"On the night of Friday, December 10, 1799, having been exposed to rain on the preceding day, General Washington was attacked with an inflammatory affection of the upper part of the wind-pipe, called in technical language, "cynanche trachealis." The disease commenced with a violent ague, accompanied with some pain in the upper and fore part of the throat, a sense of stricture in the same part, a cough, and a difficult, rather than a painful deglutition, which were soon succeeded by a quick and laborious respiration. The necessity of blood-letting suggested itself to the general; he procured a bleeder in the neighborhood, who took from his arm in the night twelve or fourteen ounces of blood. He could not by any means be prevailed upon by the family till the following morning to send for the attending physician, who arrived at Mount Vernon at about 11 o'clock on Saturday. Discovering the case to be highly alarming and foreseeing the fatal tendency of the disease, two consulting physicians were immediately sent for, who arrived, one at half-past three, and the other at 4 o'clock in the afternoon. In the meantime were employed two pretty copious bleedings; a blister was applied to the part affected, two moderate doses of calomel were given, and an injection was administered, which operated on the lower intestines, but all without any perceptible advantage, the respiration becoming still more difficult and distressing. Upon the arrival of the first of the consulting physicians, it was agreed, as there were yet no signs of accumulation in the bronchial vessels of the lungs, to try the result of another bleeding, when about thirty-two ounces of blood were drawn, without the smallest apparent alleviation of the disease. Vapours of vinegar and of water were frequently inhaled; ten grains of calomel were given, succeeded by repeated doses of emetic tartar, amounting in all to five or six grains, with no other effect than a copious discharge from the bowels. The powers of life seemed now manifestly yielding to the force of the disorder; blis-

ters were applied to the extremities, together with a cataplasm of bran and vinegar to the throat. Speaking, which was painful from the beginning, now became almost impracticable; respiration grew more and more contracted and imperfect, till half-after eleven on Saturday night, when, retaining the full possession of his intellect, he expired without a struggle."

The cynanche trachealis mentioned in this report, which is the "first accurately reported history of this form of inflammation which is to be found in the annals of medicine" is, as you will readily understand, nothing else but a gathering of pus in the larynx that probably had also begun in the upper portion of the pharynx. A timely tracheotomy might have saved that valuable life for many years.

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**Mastoiditis Without Apparent Involvement of the Middle Ear.**

CHAS. E. PERKINS, *Am. Medicine,* May, 1911, p. 265.

The author cites four cases, in all of which the external canal, fundus and drum-membrane were normal. After a detailed description of each case he argues that the route of infection may be through the blood or the middle-ear; in the first instance causing a primary osteitis. He believes the usual route of infection is via the middle-ear; infective material passes through unfavorable conditions for growths, these producing no symptoms until it reaches the mastoid. This becomes walled off by closure of the aditus from inflammatory swelling, the infectious material proliferates and causes breaking down of bone-tissue with consequent mastoid abscess. Diagnosis: tenderness on pressure (which may be confounded with unimportant nerve-conditions). If swelling and edema over the mastoid are associated with it and we can exclude other causes such as furuncle, the mastoid should be explored. On several occasions he has found the cause of enlargement due to a broken down post-auricular lymph-node.

STEIN.

## FOLDS AND WEBS AT THE UPPER END OF THE ESOPHAGUS.

BY HARRIS PEYTON MOSHER, M. D., BOSTON.

At the last meeting of the American Laryngological Association in Philadelphia, Dr. J. Payson Clark reported a case of a partial web in the upper part of the esophagus. This case interested me very much on account of its rarity and because of the difficulty of making a satisfactory examination of the upper end of the esophagus.

The fact that Dr. Clark has been unable to match his case in the literature shows that such a case is very uncommon. I have a feeling, however, that we shall find as time goes on that partial webs of congenital or cicatricial origin are not so uncommon at the beginning of the esophagus as we now think. Once or twice in the past I have thought that I was dealing with such a web, only to have it disappear before the examination was over. In one of these instances a small abrasion was all that remained of the apparent web after the tube was finally passed. If such webs do exist they would explain certain slight affections of the esophagus, which are now put down to neurasthenia. The passage of a bougie would break the web and cure the patient and establish the diagnosis in favor of nerve upset. The treatment would be right, but the diagnosis wrong.

The beginning of the esophagus is hardest to examine, and is the most difficult part in which to be sure of what you see. In shape it is like a funnel, and the mucous membrane and the muscular tissues beneath lie in loose and redundant folds. When the esophagoscope is introduced into either one of the pyriform sinuses it is liable to push a fold of mucous membrane ahead of it, and this fold looks like a partial web. A bent probe can be made to hook round it the same as in the case of a true web. After a recent experience with an artificial web of this kind in a case of cancer of the upper end of the esophagus, I took a wet specimen of the pharynx, larynx and the upper end of the esophagus, and experimented upon it with tubes. It proved to be very easy to make these artificial and temporary webs.

A few months ago I came across a true web of the upper part of the esophagus. There was a doubtful history in the case of the swallowing of some caustic. The patient had had trouble with swallowing for fifteen years. The examination disclosed about an inch below the cricoid cartilage a thin web which surrounded the esophagus. It was in the form of a diaphragm with a small central opening. The nature of the web did not become clear until I put the mechanical dilator through the lumen of it, spread the dilator and pulled it back a little. The manipulation put the whole diaphragm on the stretch and made its real character plain. This procedure suggests a method of examining the upper part of the esophagus, which should help markedly in determining the presence of true webs. It might be called retrograde dilatation and examination. By it all adventitious folds are done away with by the opening of the esophagus. In the case of the web, which was just mentioned after the diaphragm was put on the stretch, the ring of tissue was divulsed by pulling the dilator up. After this soft bougies were passed at intervals three times. The patient was quickly and easily cured.

828 Beacon Street.

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**The Arrest of Laryngeal Hemorrhage by Clamp Suture.** DR. F. BLUMENFELD, *Ztsahr. f. Laryngol., Rhinol. u. ihre Grenzgeb.*, Bd. 4, Heft 3, 1911.

After radically operating upon a tuberculous epiglottis and the ary-epiglottic folds a hemorrhage occurred which the author arrested by applying Michel's clamps by means of Avellis' tonsillar instrument, which, however, was not very well suited for the purpose. The author invented three special laryngeal instruments which fit into Krause's handle, two of them being for placing the clamp in both vertical and horizontal directions, while the third is for removing the clamp. The author thinks that in case of foreign bodies in the esophagus or trachea, these instruments will be useful by grasping the same and preventing them from slipping down.

GLOGAU.

# A SAFE AND RAPID PROCEDURE FOR SUB-MUCOUS RESECTION OF THE DEFLECTED NASAL SEPTUM, WITH PRESENTATION OF A NEW SEPTAL FORCEPS.

BY A. MORGAN MACWHINNIE, M. D., SEATTLE, WASH.

The deleterious effect of a deflected septum nares upon the general health and as a cause of disturbances in sight, hearing, smell, is well recognized. The value of any operation thereon should be defined according to the results obtained and be governed by cardinal factors that should be observed in all operative procedures: (1) simplicity; (2) rapidity; (3) safety; (4) thoroughness. The window or sub-mucous resection operation is the one of choice.

Simplicity in method of procedure and in the instrumentation should be the aim of all operators in every operation. When we read of certain methods with multitudinous instruments, some having as many as twenty, we wonder—why? Other operators are content with four or five instruments and achieve equally as good results in the same operation. The procedure itself is mechanical. There are but two incisions in vogue, in one of which a perpendicular slit is used, and in the other the "L" flap; the greater number of experienced operators preferring the vertical incision.

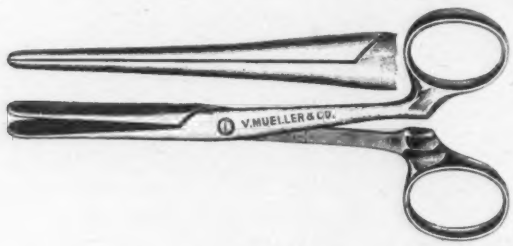
The advantages of a vertical incision are a smaller surface to heal and primary union. True it is that there is a smaller space for the procedure than when the "L" incision or flap is used, but in experienced hands it is always ample for the entire resection of cartilage and bone. In the "L" incision advocated by a few operators there is an added area for infection in which it is impossible of even approaching surgical cleanliness. The only advantage that is claimed for the "L" flap is that it exposes the entire area, rendering the liability of tearing the flap less, and of making the resection easier. It certainly exposes a greater area, but my experience does not prove the operation to be easier. No greater area than is absolutely necessary for the proper performance of any operative procedure should be exposed, and without a doubt, such is larger with the "L" flap than is necessary, evidenced by the fact that ninety per cent of the operators use the perpendicular slit as the preferred incision. With the "L" flap a greater area is exposed for infection and the tendency for the secretion to gravi-

tate brings the exudate directly in line with the longitudinal incision. Heat and moisture are always present in this cavity, the two essentials for the formation of bacteria.

We have another factor to consider—enough pressure must be exerted to keep these flaps in place until the blood ceases to flow, otherwise we are apt to have either infection, hematoma and delayed union. No one of much experience in submucous resections of the nasal septum can gainsay the fact that with the slit-opening we can do more rapid and equally thorough work.

In abdominal operations the operator aims at the smallest opening possible, and this maxim should apply equally well to the nasal operation.

The alteration that I have made in the vertical incision is to continue it half-way across the floor of the nose, thus allowing a much easier removal of the crest, so often found hypertrophied.




The preferential incision is four millimeters or thereabout, from the anterior end of the cartilage, excepting in such cases where the alae of the nares recedes and would expose this linear scar. It is then carried far enough back so that the line of incision is at least two millimeters posterior to a vertical line co-incident to the external margin of the alae.

At one sweep of the knife the incision includes the muco-perichondrium and cartilage, making it unnecessary to cut the cartilage after elevating one side; thus hastening the procedure. The edges of the mucous membrane and perichondrium are then elevated for the entire distance of the perpendicular plate. The "L" chisel is then used to take off the crest for the distance necessary to remove the exostosis. The author's forceps are then inserted in line with this crest and gradually working backwards by a to and fro lateral motion, separation of the other side takes place at the same time. Only when there are adhesions and scar-tissue is it necessary to use an elevator other than these forceps-elevators,

and then only in exceptional cases, where scar tissue is adherent, due to some previous sawing-procedure. In the majority of cases, both sides of the septum can be elevated by the one introduction of the forceps, elevating the first side being unnecessary.

As the blades are working posteriorly the cartilaginous section is straightened by means of pressure on the handle, which obviates working around a corner when using the elevator. When complete separation is thus established the blades are brought forward and raised to the desired point at which the cartilage is to be removed, and by a to and fro lateral motion the entire cartilage is taken out. The same procedure is carried out on the plate and vomer if necessary.

The advantages claimed for the author's method is simplicity, in that very few instruments are used, obviating the constant change from one elevator to another, shortening the time of this operation often to eight minutes, never taking more than fifteen minutes; this being quite an important factor to the patient. There is less injury to the tissues from instrumentation, as the less handling the tissues get the quicker the union, and the less risk of infection.

There is always risk of perforation in elevating the opposite side when using elevators, more so when the concavity or convexity is large from a fractured or displaced cartilage. The forceps obviate this by straightening the cartilage and hastening the procedure.

604 Leary Building.

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**Mucocele of the Sphenoid Sinus.** C. E. BENJAMINS. *Arch. f. Laryngol. u. Rhinol.*, p. 353, Bd. 24, Heft 3, 1911.

The author describes a case of mucocele of the right sphenoid sinus. The sinusoidal ectasia was filled with a brown, cholesterin, odorless and tasteless fluid. The walls were smooth. A cure was effected by opening the anterior wall and thus emptying the contents, after which all the aural and facial symptoms disappeared.

ED.

## TONSIL SEPARATOR.*

BY BEELER HIGBEE, M. D., LOUISVILLE, KY.

The purpose of this instrument is to separate the faucial tonsils prior to the use of the snare. It consists of two separators, one for the anterior and the other for the posterior surface of the tonsils. The scolloped end is intended for the anterior separation and is used in the following manner: The instrument is held so that this curve conforms to the anterior surface of the tonsil. It is then slipped under the plica triangularis in the supra-tonsillar

fossa, and is carried down and toward the middle line of the body. The other end is for posterior separation, and after the anterior surface has been separated this end is slipped in the same space above and carried down posteriorly. The separating surfaces are sharp, but not cutting; therefore doing away with the dangers of damaging the surrounding structures.

Atherton Building.

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**Concerning Plaut-Vincent's Angina.** GERBER, *Ztschr. f. Laryngol., Rhinol. u. ihre Grenzgeb.*, Bd. 4, Heft 3, 1911.

Until the present time it was uncertain whether the spirocheta or the bacillus fusiformis was the more important of the two etiological factors of this disease. From the splendid result brought about by the use of salvarsan, the author considers ulcero-membranous angina a spirochetic disease, while only some minor symptoms may be attributable to the action of the fusiform bacillus. The curative effect of salvarsan upon ulcers of the gums and upon those of scorbutic origin, leads the author to the conclusion that a number of membrano-ulcerous diseases of the oro-pharyngeal cavity are of spirocheta-fusiform origin and that Plaut-Vincent's angina is only a special clinical form of them, because they all show the same microscopical picture. GLOGAU.

# A NEW INSTRUMENT TO REMOVE THE NASAL WALL IN CASES OF EMPYEMA OF THE MAXILLARY ANTRUM.

BY HENRY A. ALDERTON, M. D., BROOKLYN.

The usual methods of operating for evacuating purulent collections within the antrum of Highmore, through the nasal wall, are: First, by way of the inferior meatus without removal of the inferior turbinate body, either by simple puncture with the trocar and cannula or by making a larger opening with various instruments designed for the purpose; secondly, by the removal of the anterior two-thirds of the inferior turbinate body, followed by perforation and removal of a fair-sized section of the underlying nasal wall of the antrum.

Simple opening with the trocar and cannula, while suitable for those cases which are acute and under the personal care of the specialist, is inapplicable to cases of long standing or to those cases which come from a distance and in which the after-treatment has to be left in the hands of the general practitioner. Also the washing out of the antral cavity through the small opening, notwithstanding the preparatory application of cocain solutions, is usually more or less painful from the difficulty in finding and introducing the washing cannula; in the hands of the general practitioner this becomes largely a matter of luck. It is well then, when the inferior meatal wall is made the site of attack, to make the opening sufficiently large to abolish this difficulty of after-treatment.

The more complete operation, always desirable in chronic cases, has heretofore been largely done by punching out a hole, after removal by the scissors and snare of the anterior two-thirds of the inferior turbinate body, and then enlarging this small opening by the use of variously designed bone-cutting instruments or by the use of a bone rasp. Considerable time is taken in enlarging the original opening and, where the nasal wall curves strongly outward, the procedure is not always as simple as one could desire; especially is this true when there is considerable hemorrhage.

Having in view all these facts, the writer has designed and had constructed an instrument which has given him satisfaction. He used as a model Kerrison's bone punch for mastoid work, simply making a few changes to fit the different requirements: First, the handles were changed in shape so as to fit the hand-grasp better and

*Read before the Meeting of the American Otological Society, Atlantic City, June 27, 1911.

a spur was placed on the proximal handle against which pressure can be exerted to force the punch blades into and through the bony nasal wall; secondly, the cutting part was formed by vertically splitting a trocar in half, across from edge to edge; the base of one-half being attached to the distal end of the stationery shank and the base of the other half attached to the distal end of the sliding shank. Both halves were hollow ground, the edges and points sharpened and were held apart by double springs between the

handles. The instruments were made in two sizes, the blades being 7 mm. long in the smaller and 12 mm. in the larger.

The smaller instrument was designed for removing the nasal wall in the inferior meatus, without destruction of the inferior turbinate body or, in children, with removal of that body; the larger was designed to be used only after the inferior turbinate has been exsected in its anterior two-thirds. Should the nasal septum be deviated toward the affected side, then it is necessary to remove the inferior turbinate before it is possible to use the smaller instrument.

To make the opening, with the smaller instrument, in the inferior meatus without removal of the inferior turbinate body, the parts are anesthetized and devascularized by cocain and adrenalin solutions; the instrument is introduced between the septum and the inferior turbinate, with the blades closed and the points down, until the blades reach a point two-thirds of the distance backward of the inferior turbinate body; while the shank is held parallel to the nasal floor in this position the blades are permitted to separate to the full extent of the action of the spring, whereupon the points are rotated under the edge of the inferior turbinate until the blades are horizontal and they are then forcibly plunged through the nasal wall which at this point is usually thinnest. After the blades have entered the antrum as far as they will go, they are brought together so that they will just meet but for the excised plate of bone between them; the instrument is then withdrawn by rotating the blades back to a vertical position with the points down and removed as upon introduction. An opening 6 by 12 mm. is thus made in the nasal wall in a very few seconds; amply large enough to avoid the difficulty in after-treatment that attends introduction of the washing cannula.

In chronic cases, where a larger opening is desirable, the anterior two-thirds of the inferior turbinate body is removed and then the large-sized punch is introduced into the nasal passage with the points of the closed blades up and the shank close to and parallel with the nasal floor. The blades are passed in to a point opposite the beginning of the posterior third of the inferior turbinate body, opened and rotated toward the nasal wall and, when horizontal, forced through into the antral cavity, brought together just so as to hug the included bone snugly and by a reversal of these motions withdrawn. The blades must not be pressed with the full strength of the hand against each other, as this is not necessary and might result in the fracture of the distal blade in case of any flaw in the material. The opening left measures 6 by 14 mm., but is often much larger from the fracturing of the bone around the cutting edges.

One great advantage in this instrument lies in the fact that hemorrhage offers no impediment to its use. The operation can be done just as well by touch as by sight, by marking the extent of introduction of the blades by a piece of plaster on the stationary shank. Partly because of this, the instrument is especially adapted to chronic cases when it is desirable to use general anesthesia.

The instrument is made by E. B. Meyrowitz of New York City. 142 Clinton Street.

# SOCIETY PROCEEDINGS.

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

*Regular Meeting, March 23, 1911.*

LEE M. HURD, CHAIRMAN.

(*Continued from page 1046.*)

**Syphilitic Deformity of the Nose Operated Upon Eighteen Years Ago, by Means of Martin's Bridge, Which Sloughed Out. Case to be Corrected by Bone-transplantation.** By W. W. CARTER, M. D.

DR. CARTER said that the patient who was referred to him by Dr. Chas. H. Knight, was presented chiefly for the purpose of showing the result of the use of Martin's bridge. The man contracted syphilis some time prior to 1893, and it chiefly affected his nasal tissues. The nasal bones sloughed out, together with the nasal processes of the superior maxillae; there resulted a very pronounced deformity of the nose, as is well shown in the photograph published with Dr. Knight's report of the case in the Transactions of the American Laryngological Association, 1896. The patient was operated upon four months after the beginning of the treatment for syphilis,—after the active manifestations of the disease had subsided,—by Dr. Charles H. Knight, who thought that enough time had elapsed to get a good result. He operated according to the Rouge method, which consisted in making an incision through the base of the septum and the alae on both sides, lifting up the nose, and placing the bridge in the tissue which had been dissected up. As can be seen by the illustration, the primary result was excellent, and the name of the operator is sufficient guarantee that the subsequent failure was not due to any defect in the technic. The bridge remained in the nose for seven or eight months, but during that time there was always a considerable amount of irritation and swelling over the bridge. Eventually a small sinus opened, leading to the bridge, and several operations were performed in the effort to retain the bridge in the nose, but without success. The resulting deformity can be seen. There is a guy rope of dorsal nasal tissue, reaching from the naso-frontal process down to the bulbous tip of the nose. Beneath this rope of tissue is an opening, the base of which is on a level with the face. The opening is pyramidal or triangular in shape, and

reaches from one side of the nose to the other. In the middle of the posterior side of the pyramid is an opening the size of a lead pencil leading to the nose. There is no bone in the guy rope. The man wears a sort of obturator, which enables him to draw his breath through the nostrils.

He has had no manifestation of syphilis in all of these years. A Wassermann test has not yet been made, for he has only just come again under observation.

Dr. Carter showed the Martin's bridge which was employed in the original operation. It was made of platinum, welded with gold. In this instance it sloughed out, as it has in every case which he has been able to find recorded. The question now is what can be done? Dr. Carter said that he had recently described before the section an operation for the transplantation of bone into the nose for the relief of depressed deformity,* and that he believed that a modification of the method would be applicable in this case.

First a plastic operation will have to be performed by dissecting up the tissue which lies beneath the guy rope of dorsal tissue, thus making two triangular flaps; then the edges of the remaining dorsal tissue will be denuded, and these flaps will be sutured to it on both sides. When that is done there will be some contraction of the flap, which will draw down the guy rope of tissue, until his nose is just as flat as it ever was, perhaps flatter. To prevent this he will do a bone transplantation operation. He will make an incision over the naso-frontal process, and through this with a modified Siler's knife, cutting only on the end he will tunnel down through the guy rope of tissue to the tip of the nose. He will then resect a portion of the ninth rib and shape a piece of the bone to fit through the tunnel. There seemed to be no good reason why a good result could not be obtained. Dr. Carter said that, of course, there was a good deal of fibrous tissue to be dealt with, and it was always a problem whether such tissue would contain enough vessels to nourish it until it could recover from the shock of the operation. That was his present outline of treatment though he might have to modify it later. This case had originally been reported by Dr. Charles H. Knight before the American Laryngological Association in 1896, and the sequelae were reported before the same association in 1897.

Dr. Smith said that he and Dr. Carter would soon present a case which was operated upon several years ago. first by Dr. Bull who put in a platinum plate which came out, and later by Dr. Weir, who put in a celluloid plate which also came out after some years. The patient came under his observation and he injected paraffin,

*The Laryngoscope, February, 1911, p. 94.

and presented the case before the section several years ago. She returned to see him recently, desiring to have more paraffin injected, but it seemed inadvisable to do so, and he had suggested that Dr. Carter take out the paraffin and insert a piece of her rib. This he did, and the result was very good, so far. The case was a very interesting one, showing the various methods which have been tried.

In every case that he has heard of where a foreign substance has been inserted, it has worked out. It is a question whether the bone will hold. Sufficient time has not yet elapsed to prove its undoubted value.

DR. CARTER said that in continuing this work of bone-transplantation he intended, wherever it was possible, to show cases of nasal deformity before operating upon them. He also intended to have photographs and radiographs taken and to have casts made. He wished the members of the section and the members of the profession in general to know the condition before operation, and he would show or report the case afterwards, whether it proved to be an absolute failure or a success.

As to the permanency of the operation, the indications so far are that it will be permanent. The patient whom he had already shown to the section and who was operated upon from Dr. Smith's clinic in October for a very serious deformity which was completely corrected had recently written that his nose looks better than it did shortly after the operation. The nose is filling out better, the folds in the cheeks are being drawn up, and the appearance is much improved.

The case which Dr. Carter had operated upon in Dr. Smith's clinic ten days ago, by bone-transplantation, had been first operated upon by Dr. William T. Bull, who introduced a platinum bridge eighteen years ago. Later, Dr. R. F. Ware introduced a celluloid bridge and after that, Dr. Smith injected paraffin. She seems to be getting along very nicely at present, but it is still too early to make any report. Dr. Carter had introduced a new feature into the operation, and he hoped to be able to demonstrate the case and the operation before the section later.

**A New Uvulotome.** By HAROLD HAYS, M. D.

Dr. Hays said that he merely wished to present the instrument this evening and would explain its uses more fully at the April meeting when he intends to read a short paper on circumcision of the uvula. The uvulatome is designed on the principle of the Makenzie tonsillotome with the difference that the blade is V-shaped so that

a triangular piece is cut out of the muscular portion of the uvula. The cutting blades work on the same principle as a cigar-cutter. The instrument works very simply and precisely and can be readily taken apart for cleaning.

**A New Vest-pocket Head-Lamp.** By HAROLD HAYS, M. D.

Dr. Hays said that his idea in getting out this lamp was to avoid the necessity of carrying a large, cumbersome battery, cords and lamp for making short examinations of the nose, throat or ear of the patient, particularly in those cases where a good electric light is not available. The head-lamp presented is very simply made and the whole outfit can easily be carried in the vest-pocket. It

consists of a casing measuring about three inches by one and one-half inches by one-half inch, into which fits a small, two-celled battery, the casing being mounted on an ordinary head-band. In the center of the lower portion of the casing, is mounted a small tungsten lamp on a ball and socket joint, a condensing lens being fitted over the lamp. The light is turned on and off by means of a simple switch on the left-hand side of the casing. The battery will last for an hour's steady burning and keeps an indefinite length of time when not used. The parts can be renewed at a very slight expense. The cost of the instrument and the various parts needed for replenishing is less than one-third of the ordinary apparatus.

**A Naso-pharyngeal Speculum.** By SIDNEY YANKAUER, M. D.

*(Original contribution to* THE LARYNGOSCOPE, *p. 173, March, 1911.)*

DISCUSSION.

DR. NEWCOMB asked what advantages Dr. Hays claimed for the uvulotome over and above the beveling off of the uvula at the ex-

pense of the portion. Does it lessen the patient's discomfort? It does not seem to present any advantage in the permanent result.

DR. THURBER said that some years ago he had devised a pharyngeal speculum, and had found that the instruments were much more easily tolerated when covered with soft rubber than were the metal instruments.

DR. YANKAUER said that it was advisable to cocainize the throat the first time the instrument was used, but that the patients soon become accustomed to it, and after it has been used a few times tolerate it without an anesthetic. It was warmed a little before introduction.

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*Regular Meeting, April 26, 1911.*

**Two Cases of Accessory Thyroid of the Tongue.** By HERBERT E. SMYTH, M. D.

Dr. Smith said that last February he had read a paper on accessory thyroids of the tongue before the Eastern Section of the Triological Association, and reported three cases which he had seen in his private practice, and he wished to present two of these cases to-night. One of the patients had been detained but might come later. The third case which he reported at that time was an old lady, 82 years of age, who could not come to-night.

All told, there have been sixty-seven such cases reported, including these three. That was all that he could find after a very careful search of the literature. All of his three cases were females, and all but six of the sixty-seven cases reported have been females. They can occur at any age, however, from birth to eighty-two, the age of his oldest patient, though the most common age is from fifteen to forty-five, the most active period of the thyroid gland.

The symptoms are mechanical and nervous,—nervous, because of the knowledge of the condition, and mechanical on account of pressure. In the case now presented the accessory gland is very high up and encroaches very little upon the larynx, and does not interfere in any way. The young lady discovered the condition on examining the throat and consulted him in regard to it, and it has now been under observation for three and a half years, during which time there has been no change in it at all, and she has increased in weight and health. The old lady who has the same condition knows nothing about it, having come to him for some other trouble. It has been gradually diminishing in size, as the thyroid gland would at her age.

The thyro-glossal duct or tract extends from the thyroid cartilage to the base of the tongue, and often seems to retain the power of producing thyroid tissue at any point of its course, the foramen cecum being the favorite location. When the normal thyroid is defective, it seems to act as a stimulus to the production of accessory thyroids.

In his opinion, treatment is unnecessary in a majority of these cases. In the two young women who have come under his care, the normal gland could not be felt in the neck, and he believes them to be dependent on the accessory glands for their thyroid secretion. Twenty-two per cent of the operated cases that have been reported, developed myxo-edema after the operation, and when one considers how trivial the operation has been in many of these cases it seems probable that the percentage would have been much greater if all of these tumors had been removed completely. It appears probable, therefore, that a large percentage of these patients are dependent on these accessory thyroid glands for their thyroid secretion.

The conclusions which he had reached in his paper before the Triological Association were as follows: 1. Inasmuch as many of these cases have not been reported and as they frequently come under notice accidentally when they have no symptoms pointing to this trouble, it seems safe to say that they are more common than has been supposed. 2. They result from nature's effort to supply a physiological need. 3. They frequently require no treatment, and should be considered as misplaced thyroid glands. 4. Care should be taken to find some other source of thyroid secretion before removing them radically Hemorrhage is the great difficulty in removing these growths but there has been no fatal result following operation.

DISCUSSION.

DR. T. J. HARRIS said that Dr. Smyth's report was exceedingly interesting and that the section owed him thanks for presenting the cases. We are not so well acquainted with the subject as we should be.

He agreed with Dr. Smyth that these cases are probably much more common than is usually supposed, and had no exceptions to take with most of his conclusions. He was inclined, however, to doubt whether the conclusion that nothing should be done surgically is correct. Dr. Smyth had gone into the subject very thoroughly, and his article on the subject is the most complete one that has been published. Dr. Harris said that in his own researches he had found only forty cases, while Dr. Smyth had found twenty-five others. He

had read the paper very carefully, and the statistics were absolutely correct.

As the result of his own studies, however, he felt that these cases do sometimes demand operation. In many of them the gland causes difficulty in breathing and a falling off in weight, and the patients apply for relief. In the case he had presented some time ago there was a decided loss in weight and some difficulty in swallowing. It was true that no fatal cases had been reported following operation, but in a number of cases the hemorrhage was very severe and in one or two instances the ligation of the external carotid was necessary; so the procedure should not be made light of.

There are two methods of procedure,—either through the mouth, as he had operated, or by splitting the jaw and taking the growth out from the outside.

He wished to emphasize one point,—the danger of myxo-edema. This was borne in mind by him in the case he operated upon last year. He had removed a half or a little more of such a growth, and gave the patient all the relief necessary, and she is now perfectly well, and has never had any symptoms of myxo-edema.

Dr. Chambers said that he recalled a case which Dr. Freudenthal presented but which was not called accessory thyroid, and he himself had seen tumors which he has to-night heard called accessory thyroids, but which he had not known how to name.

Dr. Harris replied that, of course, one could only speak positively of those cases where the gland had been removed and the tissue examined, but clinically they present one picture. In many of the sixty-seven cases reported, the tissue had been examined, and this had been done in the case he himself had reported.

Dr. Smyth, in closing the discussion, said that he did not wish to go on record as saying that none of these cases require operation, but only as saying that many do not require it. The three cases that he had reported showed no symptoms that required operative interference. Of course, if the growths interfere with respiration or deglutition, they require operation and should be removed, if not completely, at least partially. Where patients have absolutely no objectionable symptoms from the growth and there is every reason to believe that they are dependent on it for thyroid secretion, interference should not be recommended.

The cases where operation had to be stopped on account of the hemorrhage, or where large vessels had to be tied, were very few, and were, as a rule, where very radical operations were done. Where the growth was removed by the snare, he did not recall any very bad hemorrhage.

Dr. Smyth said that the second patient had just arrived and could be seen by any of those who wished to examine her.

**Case of Paralysis of the Left Side of the Larynx.** Presented By JOHN McCOY, M. D.

The patient was 35 years of age, and married. She came to the clinic a few months ago, with a history of having had an attack of whooping cough just before Christmas. Following this, she had trouble with her speech. On examination of her throat, a complete paralysis of the left side of her larynx was observed. In seeking the cause for the paralysis, an X-ray examination showed her chest to be perfectly normal. There was no aneurysm or growth of any kind. The esophagoscope was then passed down, but revealed nothing. She said that before coming to the clinic she had been to some doctor who had made a test of her blood and had given her some injections of mercury.

Dr. McCoy said that he had got into communication with this doctor who reported that a Wassermann test had been made, which was positive, and that he had given the patient some injections of insoluble salts of mercury.

After a very careful examination of the patient he had been unable to discover a reason for the paralysis; upon looking at her eyes he noticed a paralysis of the third nerve. Her pupil was absolutely immobile. With the idea of ascertaining whether there might not be a central lesion, the patient was referred to Dr. Hoag, who found a paralysis of the third nerve, the Argyll-Robertson pupil, but no Romburg sign, and pronounced it a case of incipient tabes.

The question then suggested itself that the paralysis might be due to a central lesion of specific origin. The only question that arises is that with these central lesions there is usually a paralysis of the abductor nerve. Her paralysis, however, is one in the cadaveric position. She cannot adduct the cord at all, and this would indicate that it was not a central lesion paralysis.

DISCUSSION.

DR. HOAG said that he was pleased to have an opportunity of discussing this case, for it was a most interesting one. When Dr. McCoy brought the patient to him he was inclined to arrive at any possible diagnosis rather than the one suggested, for it was hardly fair to fasten the stigma of tabes upon a patient if any other cause could be discovered. When the patient told him that some time ago she had had an attack of diphtheria, he had considered the pos-

sibility of that being the origin of the paralysis, although had that been the case it would probably have been discovered by the laryngologist. Another possibility was its hysterical origin, as possibly a pseudo-tabes due to some other infection. He had given her a very thorough neurological examination, and had weighed carefully every bit of history that he could obtain. She had told him of the blood-test having been made, which Dr. McCoy had investigated and found different from her version, namely, a positive Wassermann reaction. There was also the history of the supposed whooping cough. If there is anything that resembles the ordinary whooping cough, it is the laryngeal crisis. In tabetic cases, that usually comes on suddenly, with very little warning, and clears up very rapidly. That is the history we have in this case. When it comes to the palsy itself, that is a little different. He was perfectly well aware that a paralysis of central origin is usually bilateral in type. This paralysis may be of functional origin. It is possible that she may have the syndrome of tabes, and at the same time an hysterical condition, which accounts for the laryngeal condition,—two separate yet co-existing conditions. She certainly has enough symptoms to fasten upon her the diagnosis of tabes. There are four or five cardinal symptoms which go with the diagnosis of tabes, the most prominent being the lightning pains in the feet, legs, and all over the body, existing for a few weeks, months, or years. The patient gives a history of having these attacks at the present day and of having had them for some time. She has also the Argyll-Robertson pupil. The patellar reflexes are undeniably absent, but the tendo-Achilles reflex is present, as is also the abdominal reflex. There is no disturbance of sensation or of position sense. It is usually considered that the presence of two or three of the cardinal symptoms of tabes is sufficient to establish the diagnosis. We have here the lightning pains, the Argyll-Robertson pupil and the knee jerks. She also tells of some sphincteric trouble of the bladder, which has some bearing on the case. The only symptom which is not present and which would be expected, is the Romburg sign, and the ataxic gait. This she has not, but in women this symptom is sometimes late in developing. It is usual to consider three stages in this disease,—the pre-ataxic, the ataxic, and the paralytic stage. He would say that this patient is in the pre-ataxic stage.

Just what all this has to do with the laryngeal palsy, he was not prepared to say. The so-called whooping cough may represent what is known as a laryngeal crisis. Whether the laryngologists can make out a possible functional condition as the cause of the

paralysis is for them to say. In that case we should have a functional paralysis and tabes in the same person.

In reply to a query from Dr. Simpson as to how long, as a rule, these laryngeal crises last in tabes, Dr. Hoag replied that they formed a rather rare feature. So few instances have been reported in the literature that there is no fixed rule regarding them. They do not usually last as long as in this case. They clear up almost as rapidly as they come on.

Dr. Simpson said that he thought the diagnosis of tabes could be more readily substantiated than that of hysteria, for it was well known that hysterical paralyses of laryngeal origin are almost always bilateral. The paralysis in this case is left-sided; if it were on the right side it might be ascribed to a central origin or to trauma from the spasm, or whooping cough, or whatever it may have been, but a left-sided paralysis, having, as a rule a definite cause, is different. Before any other diagnosis is made, the mediastinal region should be very carefully examined and considered.

Dr. Harris said that he had examined the case with a great deal of interest, and it seemed to him that everything pointed to an organic origin. It did not suggest an hysterical condition at all. The unilateral condition and the position of the cords is decidedly against hysteria, in his opinion. What Dr. Hoag had suggested in regard to tabes is especially interesting. Some years ago, Dr. Freudenthal studied a number of cases on Blackwell's Island which had well developed locomotor ataxia, but to see an incipient case of this condition is rather rare. He did not recall having seen any case of what Dr. Hoag had spoken of as the pre-ataxic stage.

As Dr. Gleitsmann had gone into this question very thoroughly he would like very much to hear his views on the subject.

Dr. Gleitsmann did not fully agree with Dr. McCoy when he said that the cadaveric position of the vocal cord would speak against the diagnosis of locomotor ataxia. Although abductor paralysis is the prevalent type in tabes, cases of recurrent paralysis have been reported. Further, it has been observed that as soon as the whole recurrent nerve becomes implicated, abductor paralysis is liable to turn into a recurrent paralysis on account of the paralysis of the adductor groups also.

Hysteria has very properly not been assumed as an etiological factor in the case, for in hysteria we are accustomed to see bilateral paralysis of the adductors and no unilateral paralysis of the recurrent nerve.

DR. SIMPSON inquired whether Dr. Hoag did not think the positive Wassermann would also be in favor of the diagnosis of tabes.

DR. HOAG replied that he would not like to be put on record in regard to the matter of a functional condition, positive Wassermann favoring tabes. To his mind the case was an out and out tabes, and he had only given the other possibilities in order to give the patient the benefit of the doubt.

DR. MCCOY said that it seemed to him to be an unusual case, and he had been very glad to have the opportunity of presenting it.

**Cleft Palate and Adenoids.** Presented by L. L. MIAL, M. D.

Dr. Mial said that he desired to present this case before the section, although several of the members had already seen it. The mother stated that three years ago a large mass of adenoids the size of a pigeon's egg, had been removed from the naso-pharynx. There is a large mass there now, and the lateral lobes overlap the Eustachian tubes, which cannot be seen unless the lobes are lifted aside. It is a question whether to do the cleft palate operation first and then to remove the adenoids, or to remove the adenoids first and do the cleft palate operation later.

DISCUSSION.

DR. LEDERMAN said that he had seen a similar case some years ago in a boy five years of age who had a large mass of adenoids removed through the cleft palate. About three weeks later he was operated upon for the cleft palate.

DR. MACKENTY said that in his opinion the adenoids should be removed first. He had operated on several such cases at the Manhattan Eye, Ear and Throat Hospital, and some of them had adenoids. It was much better surgery to remove the adenoids first, and allow thorough healing before attempting to close the cleft.

DR. JOHNSON said that it seemed very strange if the adenoids had been removed two or three years ago that so much growth should have developed in a girl of this age. As for the question of removing the adenoids first, it would certainly seem better to do so while they could be seen. In regard to the cleft palate, there was plenty of tissue, and it would seem to be an easy case.

DR. THURBER said that on the principle that in these cleft palate cases there is much enlargement of the turbinated structures, it is just as easy to suppose an excess of adenoid tissue coming on after the operation,—nature's effort to fill up the vacuum.

**Case of Accessory Thyroid Associated with Thyro-glossal Cyst.**
Presented by T. J. HARRIS, M. D.

Dr. Harris said that he had brought this little girl before the section as he thought the case would be of interest in connection with the cases shown by Dr. Smyth. He had only seen her once. She was twelve and a half years of age, and presented herself at the hospital because of a swelling in the neck which she "did not think should be there." There was no pain, no difficulty in swallowing, and no symptoms of any kind except the swelling. Examination with the laryngeal mirror revealed a growth at the base of the tongue. With his experience in these cases he would have made a diagnosis, symptomatically, of thyro-glossal cyst,—certainly of a thyroid at the base of the tongue but deferred to Dr. Myles' larger experience in such cases, and hoped that he would speak on the case.

DISCUSSION.

DR. MYLES said that the case presented by Dr. Harris seemed to be a mixed case of accessory thyroid and thyro-glossal cyst. The growth was very closely attached to the upper part of the hyoid bone, and it was supposed to have something to do with the bursa which the thyro-glossal duct passes. In several instances where he had dissected out this region after ineffectual attempts had been made by others, he had finally succeeded by dissecting and following it up to the base of the tongue. In one case he had passed up to the hyoid, burrowed through the tongue, and dissected out part of the tongue.

This little girl does not seem to suffer much. Generally they suffer a good deal, but she seems to have more thyroid tissue beneath her tongue. The other cases have been a thin cyst wall which would dilate in different directions, and if destroyed in one place it would come out in another.

Recently he had a case in which the cyst occurred beneath the base of the tongue, and the patient, a young woman, was profoundly affected in many ways,—he could not say whether it was physical or neurotic. He had sent a specimen to the laboratory, hoping that the pathologist could distinguish between a thyroid cyst and a thyro-glossal cyst. He had the impression that this one is a salivary cyst which simulates a thyro-glossal cyst. Of course, if one should attempt an operation for thyro-glossal cyst and should discover that it was a salivary cyst, it would give much trouble, but it should be removed. In this case there seems to be a lot of thyroid tissue. Then arises the question, if that is the only thyroid, would it be

right to remove it. That should be studied very carefully first. There seems to be too much thick, heavy tissue for the ordinary thyroid cyst.

DR. LEDERMAN said that he would like to mention a very interesting point in the surgical technic of these cases, employed by Dr. Parker Syms in operating on a case at Lebanon Hospital. Not wishing to rupture the cyst-wall, he used a vacuum pump, much on the order of a small Bier glass cup, and after he had separated the cyst from the surrounding tissue he sucked it into this cup and was able to get at it very thoroughly and dissect it out very easily. He said that this method could be used for larger cysts. He was able to hold it without destroying the cyst sack.

DR. MACKENTY said that from the examination of the case it seemed to him that there might be absence of the thyroid gland in its normal position. The isthmus could not be palpated and the lateral lobes, if present, must be very small. The gland tissue under the chin was firm and did not suggest cystic degeneration. He advised leaving it alone.

DR. HARRIS asked Dr. Myles whether accessory thyroids were usually present or whether they were exceptional.

DR. MYLES replied that they were very exceptional.

DR. HARRIS said that taking their exceptional character into account in connection with what Dr. MacKenty had said, there would be a strong argument in favor of conservative work in this case. He certainly would study the case carefully before anything was done, and would try to avoid the risk of myxo-edema.

**Further Report on a Case of Brain Abscess, Secondary to Ethmoiditis and Frontal Sinusitis.** By JOHN MCCOY, M. D.

Dr. McCoy said that this case had been placed on the program under the category of "Clinical Patients," but that it really is the final report on a case which he had reported at Washington last year:

Herbert, E.; age, 10 years. Family history was negative as to syphilis or tuberculosis. Had pneumonia twice when a baby; also has had measles and chicken pox. About July 25, 1909, began to have pain over the left eye. After suffering with this for four or five days, the upper eyelid became red, painful and very much swollen. This swelling was poulticed for one week at the suggestion of the local physician, and on August 6 the swelling was incised at the outer angle of the eye. On August 13, he was seen and operated on by a very competent eye surgeon. The frontal sinus was exposed through a Killian incision. The frontal sinus was relieved of considerable pus and thoroughly curetted, together with some

anterior ethmoidal cells, and the fronto-nasal duct was enlarged. A piece of gauze-drain was passed down through this duct and allowed to remain. The external wound was completely sewed up and healed by primary union. The gauze-drain through the nose was removed little by little in several days. The boy apparently did fairly well for a period of five weeks, having, however, during this time more or less constant headache and intermittent discharge of pus through the initial small incision in the upper eyelid. On September 20 the writer saw the patient for the first time. At this time he had developed a swelling on the left forehead, about one-half inch below the hair line. This swelling was incised, and a large epidural abscess was found leading down to and connecting with the frontal sinus. An area of necrotic bone was removed, about one and one-half inches wide and two inches long, down to and including part of the posterior wall of the frontal sinus. The dura which was covered with thick granulations, was curetted and was found to be intact. The wound was allowed to heal by granulation, which it did very kindly, except at the extreme lower end, where a fistula, which led from the frontal sinus down into the ethmoid cells, persisted. During the healing of this wound, however, the headache, which at first disappeared entirely, later came on intermittently. The boy would go for a period of a week or ten days or two weeks, feeling in splendid health, eating well, sleeping well and was very bright and active. Then suddenly he would be attacked with a severe headache referred to the region over the opposite eye. He would become drowsy and have nausea and some vomiting. These attacks lasted for a period of from twelve to twenty-four hours, and would as suddenly cease, and again the boy became bright and active. His temperature and pulse and urine were normal. This continued until November 18, when it was decided to more thoroughly remove the ethmoid cells than had been done at the first operation, with the feeling that perhaps there was an epidural collection of pus in this region making intermittent pressure on the dura and discharging through the fistula. On November 18 the ethmoid labyrinth, in which polypi and granulations were found, was thoroughly removed. A small area of dura was found uncovered over the anterior ethmoid cells. The patient did remarkably well after this operation, and in two days was as bright and alert as usual. On November 24, however, six days later, he had another spell of severe headache, drowsiness and vomiting, and this continued until the next day, November 25, when he was seen by a neurologist, as the writer now felt that the trouble was in the brain. When seen by the neurologist, his attack had passed off and the boy was so bright and alert mentally that he decided that there was no brain abscess present. The eye grounds showed slight congestion of the disks. That night, however, the patient had two convulsions, and on the following day the writer felt justified in entering the brain. Accordingly the skin was raised from the dura over the old epidural abscess near the outer end of the eyebrow. After penetrating the brain for about one-half an inch a large abscess was found containing about one and one-half ounces of pus. A rubber tube was inserted for drainage and the boy returned to bed. The wound was dressed daily, but he did not do well. The rubber tubing became clogged with brain tissue and the abscess did not drain.

Iodoform gauze, covered with gutta-percha tissue, was next tried, and this also seemed to fail, as the boy's condition steadily grew worse. His temperature mounted to 105°, his pulse to 140 and his general condition was somnolent or delirious. On the fifth day after opening the abscess a second connecting abscess was found, containing an equally large, if not larger, amount of pus. It extended deeper into the brain and more toward the base. The boy was returned to bed in a very precarious condition. The writer felt that the downward trend of the patient and the second abscess were a result of incomplete drainage of the first, and that if anything were to be accomplished it would be as a result of more efficient drainage. Accordingly on the following day, while the patient was in a very low state—at times it was almost impossible to feel his pulse—a section of bone three-fourths inch in diameter was removed from the side of the skull in the temporal region about two inches back from the outer end of the eyebrow, and on a line just above it. An opening was then made into the abscess cavity from this point. Iodoform gauze was now inserted into the abscess cavity both from the front and the side opening. An estimate of the size of the cavity may be obtained from the fact that two strips of gauze, each twelve inches long and one inch wide, were almost all packed into it. Practically from this moment on the patient progressed to recovery. The wounds were dressed daily. The cavity was swabbed with peroxide and iodoform gauze inserted in both openings. Two smaller subsidiary pockets were found during the next two weeks, one passing in toward the median line and one passing up toward the vertex. The temperature gradually sank to normal, and the patient gradually recovered the use of all his faculties. At first he was troubled with dreadful nightmares and with loss of memory for recent events, also incontinence of urine during sleep. These, however, have all disappeared. The drainage was entirely withdrawn from the front wound at the end of five weeks and from the side wound at the end of eight weeks. There is a hernia cerebri from the front wound, which at first was the size of a large walnut, but which has gradually diminished until to-day it is the size of a chestnut. There has never been a hernia from the side wound. It was deemed best not to interfere with the hernia from the front wound, as it was impossible to cover it with bone or skin on account of the large removal of bone at the time the epidural abscess was treated.

The eyegrounds were looked at about two weeks after first opening the brain and showed well-marked choked disk. The vision to-day is 20/40 in the right eye and about 5/200 in the left eye.

There was no aphasia at any time during the illness.

That was in February. The side wound healed entirely, and the hernia cerebri came down from the size of a walnut to the size of a hazel-nut, and at the end of a month the entire hernia had undergone superficial sloughing, and the boy was discharged cured with his faculties all normal. This was particularly interesting because destruction of the left frontal lobe is supposed to result in the loss of all sorts of intelligence, but his mother said that he was as bright

as he had ever been. He could play on the piano as well as he had done before, and could remember all his studies where he had left off.

He was discharged about the first of March. Dr. McCoy saw him again in the middle of May, and he was then perfectly healthy and well, playing around, and getting plenty of fresh air and freedom. His mother thought of taking him to the country, and wanted to know if there was anything he should do. She was told to have him be careful about climbing trees and to avoid injuring that part of the head. He was not seen again until about August 8. He had been playing around and having a fine time, but suddenly complained of headache. This was followed by drowsiness, which gradually lapsed into coma. The drowsiness commenced about nine o'clock and by twelve o'clock he was completely unconscious. His family brought him to town the next day, and I saw him that night, August 10. He was unconscious, temperature 106°, and the site of the wounds both in front and at the side were bulging out half an inch.

The question was what had happened to him. He had figured to himself that possibly a small focus of pus had been left in, which started up a general condition and pressure on the brain. He opened the front and side wounds, and to his surprise there was absolutely no pus at all. The fluid which escaped was perfectly pure and as clear as water. He explored the cavity and found no pus. This taught him that the next time he should put in a needle first; for he thought that in his explorations may possibly have infected the patient, since he died three days later with marked meningitis.

What had happened? He was inclined to think that the original pus-cavity was very close to the lateral ventricle, and through some cerebral pressure the lateral ventricle had ruptured into the cavity, and as the fluid increased it would press on the brain, and possibly the pressure on the heat center would account for the high temperature. On the other hand, there was possibly a low-grade meningitis present all the time and a low-grade infection, and six months later this started up. He would like suggestions as to what had happened.

**The Indications for Radical Operation in Frontal Sinusitis.**
By S. McCULLAGH, M. D.

Acute Frontal Sinusitis: Never operate unless it is impossible to obtain drainage by intra-nasal treatment, surgical or otherwise, unless some complication arises that makes operation imperative.

Chronic Frontal Sinusitis 1. Operate immediately in any case where any of the following complications exist or threaten,—cerebral abscess, epidural abscess, meningitis from extension, orbital cellulitis or abscess from extension, cellulitis or fistula due to perforation of the anterior wall of the sinus, necrosis, osteomyelitis, septicemia, in the presence of any fundus change apparently due to the infection in the sinus, and where malignant disease is suspected in the sinus.

2. Operate in every case where the allied conditions are such that much intra-nasal surgery will be required to obtain good drainage. In this class the writer would include cases in which there is pronounced involvement of one or more of the other sinuses, especially the ethmoids.

3. Operate when the symptoms point to or the X-ray plate shows marked involvement of the sinus, even though the ethmoids be but slightly involved and the obstruction to drainage removable by a slight intra-nasal operation, when circumstances are such that a prolonged course of treatment is impracticable.

4. Do not operate for this condition of affairs in patients able to undergo a more or less protracted course of treatment, but correct any intra-nasal condition demanding relief and treat locally.

5. Operate on the last class of cases (4), if the subjective symptoms do not improve steadily or if the objective symptoms are not ameliorated, e. g., no diminution in the amount of pus secreted; progressive involvement of the ethmoids.

6. Operate on any case where toxemic symptoms are not promptly relieved by real or apparent relief of obstruction to drainage and appropriate local treatment.

DISCUSSION.

Dr. Harris said that there was only one fault with the evening's program—there were so many good papers all at once, each deserving a full and free discussion, and there was not sufficient time for this.

Dr. Delavan was entitled to the hearty thanks of the section for his most interesting presentation of the history of laryngology in America.

He wished to congratulate Dr. McCullagh on the presentation of his paper. Such a paper has long been wanted, and the succinct manner in which it had been prepared made it especially valuable. In his opinion, the pendulum in regard to frontal sinus work is swinging away from the radical operation, and that is not being

resorted to so hastily and thoughtlessly as it was ten years ago. Many cases can be helped and cured by intra-nasal operations. With most of Dr. McCullagh's conclusions he agreed. No one would question for a moment the need of operation in chronic cases. Dr. McCullagh had read his conclusions rather hastily, but Dr. Harris said that he had gleaned that he had admitted that there was a personal equation in deciding on the external operation, even where anatomical defects were ruled out. The patient has to be taken into consideration. It is open to discussion what we should tell the patients with a moderate amount of pus which can be controlled by intra-nasal drainage. They are subjecting themselves to fully as great a risk of life from the radical operation as from no operation at all, and we cannot disregard it. Cases have frequently occurred where the radical operation was followed by death. Only recently he had heard of two cases of the Killian operation which were followed by death. It must also be remembered that the success of the surgical procedure depends upon the skill with which it is performed. Many cases are going about the city to-day where the operation has not been a success. That should also be borne in mind in deciding the method of operation.

Dr. McCoy had made a most valuable contribution to literature in his report. So far as he knew, it was unique, for he knew of no similar case following frontal sinus disease. It was very sad that after all his hard and fine work a fatal termination should have resulted.

Dr. Myles said that he too wished to congratulate Dr. McCoy upon his report. It was most unfortunate that the child should have died; there seemed to have been no fault in the operation. There may have been some foci or some little spot which months afterward destroyed the results of his great labor and care under such difficult conditions.

Referring to Dr. McCullagh's paper, there is no subject in which there is so much difference as the frontal sinus operation. Some fifteen or twenty years ago he thought that the frontal sinus was where they wanted it. That was when the external operation was being so widely performed, but as time went on he saw cases that did not act properly after the radical procedure,—some little spot that had not been obliterated, requiring a second operation, and pockets walled off by themselves in some remote region. Then when he observed in the sphenoid and the antrum that large holes without much curettage did much better than when they were obliterated, he tried to carry out the same operation with the frontal

sinus, although the difficulties were great, and in some cases impracticable.

Last year he had the most difficult Killian operation he had ever performed. The case passed back to the pterygoid plate, with a deviated septum pressing high up. After removing the floor of the cells, the antral walls, and the sinus, to his great surprise obliteration took place between the orbital tissue and the septum, and there was a cavity where the Killian was performed, with no outlet; so he had to remove the septum up to the cribriform plate, in order to get an opening. A few months ago he had an almost parallel case, where the same operation had been performed. The pus was welling up and issuing through a small hole. It was re-opened, part of the septum removed, and satisfactory drainage secured, and to-day the patient is doing nicely. In other words, in these two cases, after a Killian had been performed (one of them by himself and the other by another operator) drainage had to be re-established. He has yet to have a patient whose pain has been relieved by the internal treatment who allows him to do a Killian, even where he has advised operation. They prefer to have a little pus, rather than submit to the radical treatment.

DR. VOISLAWSKY said that the question of counter-drainage had been very well brought out by Dr. McCoy, and it was very clever that he should have made it as he did. He had never seen a case of brain abscess drained in that way, and it probably saved the child's life at the time of the first operation.

**Paper: Circumcision of the Uvula.** By HAROLD HAYS, M. D.

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*Regular Meeting, May 23, 1911.*

**Two Unusual Cases of Abscess of Larynx.** By WOLFF FREUDENTHAL, M. D.

(*Published in full in this issue of* THE LARYNGOSCOPE, *p. 1083.*)

**Cases of Sub-glottic Tumor: Removed by Means of Fulguration.** Presented by WOLFF FREUDENTHAL, M. D.

This patient is an inmate of the tuberculosis sanitarium at Bedford Hills. The tuberculin test was positive, and outside of that there were all the signs of tuberculosis over the chest. Upon examination there was found in the subglottic region a small mass

about the size of a cherry-pit on the right side. It could not be determined exactly where it came from; probably it was attached to the vocal cord, but was only visible in the trachea. It was entirely sub-glottic, and it was difficult to examine the patient as he coughed constantly. It was evident that the removal of the tumor would be extremely difficult as no instrument seemed exactly suitable. It could have been done by direct laryngoscopy, but that would have necessitated general anesthesia, which was not desirable under the circumstances. Fulguration was therefore decided upon.

Dr. Freudenthal showed the apparatus used, which seemed very simple. The wire connected with the handle was the main thing. It could be changed just as desired, and using it in the manner indicated, the current would not be too strong. The current should be only strong enough to give a spark of about half an inch. After using this treatment five or six times, the whole mass disappeared. Naturally, the larynx has to be anesthetized, and the current turned on only when the wire is in the larynx. Sometimes the patient would close the larynx and gag. Then the current was interrupted, and the procedure had to commence again after the patient was quiet. If the tumor is not reached by the first attempt, a few sparks may get away and strike the cords, but that does not hurt the cords at all. This method is of great advantage over the others in certain cases. One patient, for example, began to gag as soon as the removal with any other instrument was attempted, but with this method he was perfectly quiet. It may be that this apparatus does not seem so formidable as forceps, etc. This apparatus seems to be particularly suitable for the more difficult cases, especially sub-glottic tumors.

DISUSSION.

Dr. Cocks, referring to the case of sub-glottic tumor removed by fulguration, said that this winter, at the suggestion of Drs. Smith and Chappel, he had been using his method to remove multiple papillomata of the larynx in a child. The mass of papillomatous tissue was as large as the end of a man's thumb, and completely occluded the larynx, so that it was necessary to perform a tracheotomy. Three or four applications of the fulguration treatment had been made, and the growth is certainly diminishing in size. The treatment has been applied with the Jackson tube. The patient did not stand chloroform well, and this afternoon they started in with chloroform and switched to ether, and while the

wire was down in the larynx through the Jackson tube there was a sudden "piff," and the ether ignited. The anesthetist threw it on the floor and stamped it out, without injury to the patient. It was thought that the sparks had passed from the Jackson tube through the larynx and up by the tracheotomy tube, and ignited the gas in that way. It was, of course, possible that the spark went through the handle and thus ignited the ether, but as he had not felt it pass through the instrument in his hand, he was inclined to think it went into the trachea and came up through the tracheotomy tube. It might be well to bear in mind that it is dangerous to use ether with fulguration.

DR. SMITH said that three years ago he had had several cases of multiple papillomata of the larynx in children, in one of which the recurrence after surgical removal was particularly persistent, and that after a successful application of the fulguration spark, the warts suddenly disappeared. He had concluded that the spark had been effective, although the possibility existed that the child had reached the proper physiological condition for them to disappear and that the application of the spark was incidental. The difficulty of applying the fulguration spark lies in the inability to properly insulate the applicator; also in the fact that a moist mucous membrane will diffuse the spark, although the success of the operation lies in its condensation. For this reason, as well as for many others, ether should be avoided, as it renders the larynx much more moist.

Referring to Dr. Freudenthal's case, Dr. Smith asked if there was any specific history, and upon being informed that there was none, said that some years ago he had had a case simulating this one, in which an abscess appeared upon the right arytenoid and a large slough occurred. The administration of large quantities of potassium iodide, even up to 180 grains, three times a day, had ultimately resulted in the disappearance of the lesion on that side, but not until a part of the arytenoid cartilage had extruded. The patient had been presented before the section at that time, but died a few years later from cancer of the larynx upon the opposite side, the full history of which would be given at some future meeting.

DR. FREUDENTHAL said that if the current is too strong you get a short circuit and for that reason the current should be tested beforehand. Of course, the experience with the baby was a warning. He himself had always used cocain and it worked very easily.

Replying to Dr. Simpson's remarks, he said that it may be possible that after a while the mass bursts, but he felt convinced that

the pus was emptied into the cavity just after or just before the tracheotomy was performed; but it went off and filled up again very rapidly. Autopsy was not permitted.

Replying to an inquiry from Dr. Hurd, Dr. Freudenthal said that he got pus after making the incision.

Dr. Simpson said that he was inclined to think a single swelling in the larynx is apt to contain pus,—either an abscess pure and simple, or a perichondritis of some kind. He had seen two such cases recently. Pain on phonation or pain on pressing the larynx with a swelling within the larynx is very suggestive of abscess.

**Case of Primary Tuberculosis of the Nose.** By C. D. Van Wagenen, M. D.

(*Original contribution to* The Laryngoscope, *p. 869, August, 1911.*)

DISCUSSION.

Dr. Freudenthal said that on looking at such a patient one would naturally think of syphilis, and it would seem that in the beginning the diagnosis was not very clear. At Lebanon Hospital, where the patient was first seen, the diagnosis was syphilis. He has now under his care a patient who presents the same picture, only there is a little more left of the septum; but he has no tuberculosis. It is difficult to say what the cause of the lesion in this instance was. The nasal condition does not seem to be tuberculous, though he cannot say positively that it is not.

Dr. Smith agreed with Dr. Freudenthal that the nasal aspect was not that of tuberculosis, though the appearance of the larynx did suggest that condition. It was not impossible that the man had a mixed infection, tuberculosis of the larynx and a different condition above. It was rare to see a man with such a destructive process of cartilage and bone of such long standing with no more evidence of constitutional disturbance. He was inclined to doubt tuberculosis, per se, in this case. There would seem to be some other condition in addition to account for the great loss of tissue without the accompanying pain and general debility.

Dr. MacKenty said that it resembled a case he had a few years ago, in which a syphilitic lesion appeared in the throat and mouth, with a subsequent tuberculous condition of the pharynx, from which the patient died. He was inclined to believe that the case was syphilitic in its inception, with a tuberculous condition grafted upon it. The patient was now undoubtedly going to pieces with tuberculosis.

DR. HURD said that tuberculosis of the nose is very rare, and is not usually so destructive. The interesting point to him is what happens. If too much mucosa is taken out in the submucous operation, as long as the lateral cartilage with a keystone from the quadrilateral is left there is no deformity. That is why one sees all sorts of botches in the submucous operation, and yet no falling in of the nose.

DR. VAN WAGENEN said that, as he had already stated, the original diagnosis at Lebanon Hospital was either tuberculosis or syphilis; they were not at all sure, but apparently at that time they leaned toward syphilis. They gave the man twenty-four injections of salicylate of mercury, and, daily, nearly 600 drops of the iodide, without any apparent effect on the tissue. Then he was presented before the section as a case of epithelioma, and apparently, as nearly as could be made out from talking with the men who recalled the case, it was thought to be a tuberculous ulceration. The doctor who took the section for examination said that quite a large portion, at least an eighth of an inch, had been taken from the left side, and base of the columella, cutting down deep into the granulation-tissue. This he submitted to Dr. Ewing and to Dr. Johnston. The patient was also taken to Dr. Johnston. When trying to trace up the history of the case, Dr. Ewing wrote that he kept no records of clinical cases, but that as between epithelioma and tuberculosis there could be no mistake. Dr. Johnston said that he recalled the case, and had examined the tissue in 1908 (presumably a year after he had been under observation). Dr. Johnston was of the opinion at that time that the tissue was tuberculous and that the patient was tuberculous. After that the patient disappeared from observation, and had been all over the world,—China, Japan, etc., with no treatment other than large quantities of alcohol daily, which had not improved his condition. He had been sleeping any and everywhere, and keeping up his vigorous application of the finger-nail and match to clear out the nose, until finally part of the septum fell out. The Wassermann test had proved negative, and vigorous antisyphilitic treatment continued for some time was also negative. As early as 1907 he had been under observation for about two years of this treatment.

Dr. Van Wagenen said that he did not know how much reliance the members of the section placed on the Wassermann test, but that the negative Wassermann would seem to be of some value; also the negative result of the anti-syphilitic injections, as well as

the opinions of Drs. Ewing and Johnston in 1907-8, long before the present tuberculous processes had set in. He did have a tuberculous laryngitis, with hoarseness and difficulty in swallowing for two months before coming under observation. Taking the whole picture as it stands, it can hardly be anything else than tuberculosis. Prior to 1907, of course, there may have been a simple traumatic ulceration of the septum to start with, which later took on a tuberculous character, or, as some of you say, a specific aspect. All the evidence, however, seems to favor tuberculosis, and all the evidence is against syphilis, in spite of the fact that it is extremely rare to have a tuberculous process start in the nose and present the reverse order of involvement evidenced in this case.

**Post-operative Case of Malignant Adenoma of the Nose.** By LEE MAIDMENT HURD, M. D.

The patient, who was unable to speak English, presented himself at the Manhattan Eye, Ear and Throat Hospital, complaining of nasal obstruction on the left side. Examination of the nose showed a mass of very vascular substance in the left side of the nose. This was cocainized and a piece removed for examination, and Dr. Wright reported the growth to be a malignant adenoma.

The growth was infected with offensive bacteria, and the odor was fearful. The patient, however, did not seem to mind that, and only complained of the obstruction. There was no means of determining the origin of the growth, and the only chance of permanent recovery seemed to be the removal of the tissue. This was done, after a preliminary ligation of the external carotid. The cheek was laid back and the antrum was entered through the anterior wall, and the antrum and nose turned into one large cavity. The stump of the growth was found to be springing from the ethmoid and was removed. Then the frontal sinus was entered and found to contain a little dammed up pus, and was cleaned out. The ethmoids and sphenoids were cleaned out, and the sphenoidal wall between the left and right sphenoids was removed, and all of the nasal mucous membrane. When the operation was concluded there was nothing but the mucous membrane of the vestibule remaining in the nose. There was no gland-bearing tissue left in that side of the nose. It is now lined with a smooth, glistening moist membrane. It is moist and looks well.

DISCUSSION.

DR. THURBER inquired whether any other instrument than a curette was used.

DR. HURD replied that he used a Gruenwald curette, and simply broke it down, and the straight instrument went right in. The instrument could be turned around in any direction.

DR. SMITH said that it was a source of unusual pleasure to have a demonstration of entering the frontal sinus by the internal route from Dr. Hurd. The size of the sinus and its lateral extent with its many septa were interesting points. The frontal sinus can be drained in the majority of instances through the nasal route by taking off the middle turbinate and the proper processes. Of course, this was not a typical case, or one which anyone would have thought of entering externally. At the same time, he was glad that Dr. Hurd had seen the light in this instance, and hoped that he would have many more successful cases.

DR. FREUDENTHAL inquired whether there was much bleeding during the operation.

DR. HURD replied, no, for he had tied off the external carotid first.

In reply to an inquiry as to whether the other side was at all involved, Dr. Hurd replied in the negative.

Dr. Hurd said that he thought between ninety and ninety-five per cent would get well with intra-nasal drainage. In a case like this it would seem that there was such a space that one could go in and work with perfect liberty. There are cases in the ethmoidal labyrinth where it is well to go in from the outside. He did not think the fatalities from internal operations were reported; if cocaine is used and a meningitis develops, nothing is said about it. Whereas, if an operation goes wrong from the ouside, a detailed report is made.

DR. SMITH said he thought that unquestionably there were cases in which the external method was imperative, but that with the modern conveniences for determining accurately the distance between the inner and the outer plates of the frontal sinus and the size of the sinus, and considering the greater familiarity of all operators now with the anatomy of this region, he believed that almost all of the frontal empyemata could be overcome by the internal method of operating. He did not advocate curetting the sinus nor doing further operative measures than giving free drainage. He believed that the nasal mucosa had established an immunity to the pus invading the sinus and that the external tissues, periosteum, etc., had not, and that the nose was the proper route

by which to drain the sinus. In fact, he believed that there were only four conditions justifying the external operation: (1) Where the pus had broken through the external table and had formed a periosteal abscess; (2) when the pus had invaded the orbit; (3) when the X-ray showed a large pocket far removed from the naso-frontal duct and walled off by a septa of bone; (4) when adequate and persistent internal methods had been employed for a long period of time without avail and the patient's health was suffering in consequence.

**Recurrent Laryngeal Paralysis with a Mediastinal Tumor or Aneurysm and Left Total Paralysis.** By J. E. MacKenty, M. D.

The history of the case dates back three months, when the man suddenly lost his voice and complained of pain over the left side of the chest and in the left shoulder. Since the onset he has lost fifteen pounds in weight. He denies any specific history. The Wassermann test is mildly positive. The patient was presented to obtain a diagnosis between aneurysm and mediastinal growth.

Dr. MacKenty presented a posterior radiograph, showing an enormous mass. The man has a total paralysis of the left vocal cord and suffers considerable pain. He seems to be healthy otherwise. The size of the growth was greater than an aneurysm, and its distinct outline would be in favor of a neoplasm.

Physical examination reveals no murmur, no tracheal tug. There is tracheal pulsation. The pulses are equal at both wrists; also the blood-pressure in both arms.

DISCUSSION.

Dr. Simpson said that he had seen the patient with the unilateral paralysis at the Vanderbilt clinic before coming here and the provisional diagnosis made there was aneurysm. He was sent to the general medical department, where the same opinion was held. He has failed a great deal physically. When he first saw the man he was in very excellent condition, and at that time he gave a history of sudden paralysis, and there was some question as to whether there had not been rupture of a blood-vessel.

The case seems to illustrate how early in aneurysm unilateral laryngeal paralysis takes place. There may be no physical signs or subjective symptoms, but the first thing noticed is the paralysis. He has seen that in a number of instances, and it may be a very early sign of mediastinal involvement.

**Case of Gumma of the Soft Palate and Eyelid.** By S. W. THURBER, M. D.

DR. THURBER expressed his regrets that he was unable to present the case he had originally intended to show, but would instead present a patient who had come to the Vanderbilt clinic that afternoon. She has had several attacks of sore throat during the last ten years; has had several miscarriages and seven children, none of whom are living. For the last two weeks she has had an ulceration of the soft palate with destruction of the uvula; the typical picture of a broken-down gumma. With this, however, she has a thick infiltration of the left upper eyelid which has broken down in several spots and presents a thick, sticky discharge. There is no affection of the sight. There is some conjunctivitis of the right eye.

She was presented on account of the probable double tertiary syphilitic lesion; a condition of the eyelid not observed before.

**Report on Case, Showing a New Method of Operating on Cleft Palate.** By J. E. MACKENTY, M. D.

Dr. MacKenty said that he regretted his inability to present the case, on account of it being a private one. It was a simple cleft palate extending to the incisors. He wished to say a few words about the method which he employed. He has treated perhaps ten cases by the Brophy method. The method he employed in this instance was more simple than the Brophy, and required just about half of the time for its execution. He favors the Brophy rather than the Lane when it can be done. It is less mutilating, and a better palate is obtained with less fibrous contraction. The points against the Brophy method are the plates which he uses to relieve tension. They are injurious to the soft tissues. Dr. MacKenty said that he had not been able to adjust these plates so as to get more than a small percentage of perfect unions. The line in the center seemed to hold fairly well, but the edges of the plates caused sloughing. The reason for this seems to be that the movements of the throat and tongue causes the edges of the plates to impinge too strongly against the delicate tissue of the newly formed palate. This causes necrosis along the edges and under the plates. The time consumed in the Brophy operation is too great. He had seen Brophy himself spend two hours in performing it. His method of suturing is too slow. The putting in of his stay-sutures takes a good deal of time, and his interrupted horse-hair suture is a great time-consuming process. In this case which he operated about fifteen days ago, Dr. MacKenty said that he had devised a

false palate made of wire which rests below the true palate and is fastened to the teeth, or, in the absence of the teeth, the alveolus is transfixed in order to hold this false wire palate in position. He uses Lilienthal's twisted wire suture, which is as flexible as silk. (No. 36.) A cutaneous lock-suture is used. The protecting wire-palate is made on a cast of the hard palate so that it fits accurately. Platinoid wire is used to construct this protective device.

The advantages claimed are: absence of tongue-pressure, a good view of the whole operative field during the healing process and time-saving in the operation.

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**Treatment of the Inflammatory Diseases of the Accessory Nasal Sinuses.** G. KILLIAN. *Deut. med. Wchnschr.*, April 20, 1911.

Killian gives an illustrated description of the electric light bath for the head which he has found extremely useful in treating acute inflammations of the frontal, sphenoidal and maxillary sinuses. The four incandescent lights in the box shine directly on the face, the eyes being protected by a leather bandage. The patient breathes comfortably through a tube in his mouth; by a special contrivance the air is impregnated with moisture before it is breathed. The action of the active hyperemia thus induced is enhanced by small doses of sodium or potassium iodid, bed rest, and 0.5 or 1 gm. acetyl salicylic acid (aspirin) half an hour before the electric bath to promote sweating. He states that his experience with this method of treatment has been so extensive and so favorable that he regards it as far superior to any other. Recovery is complete under it in a week or two unless there is some obstacle in the nose to evacuation of the sinus. He warns against operative measures during the height of the inflammation. Only when the acute phase is past and the affection is becoming chronic is it safe to venture to resect the lower end of the middle turbinate. If the frontal sinus has to be opened it should be done from without. Radical operations should be reserved for old chronic cases and success depends on careful individualization and skill; great harm may easily result from the lack of either.—*Ex.*.

## CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

*Regular Meeting, March 21, 1911.*

C. M. ROBERTSON, M. D., CHAIRMAN.

**Tumor of the Hypophysis Cerebri.** By DRS. HECHT and PIERCE.

Dr. Dorsay Hecht discussed at length the symptomatology from the neurologist's standpoint of tumors of the hypophysis.

Dr. Norval H. Pierce demonstrated on an anatomical preparation the intra-nasal route for the operation for the removal of tumors of the hypophysis.

DISCUSSION.

DR. JOSEPH BECK stated that the point made by Dr. Hecht in reference to the diagnosis of tumors of the hypophysis by the aid of the radiogram interested him particularly, and the radiogram that he presented here this evening of his case shows with what certainty, in addition to the other symptoms, one can make a correct diagnosis.

He feels he is not qualified to discuss the subject further because he never had a case of this kind that he knows of. At the same time he wishes to be permitted to mention briefly a case that proved to be one of tumor of the hypophysis, post-mortem, in which he made the diagnosis of, and operated for, cerebellar tumor. This he did affer a very careful examination, with the aid of a neurologist in consultation. In this case they had the bitemporal hemianopsia, a symptom that is looked upon as almost pathognomonic of tumor of the hypophysis. It was, however, not absolute on the one side, and since the other symptoms of imbalance, localized pain in the left occiput were so prominent and the X-ray picture absolutely negative as to the enlarged sella turcica, and as there was also an absence of other symptoms mentioned by Dr. Hecht which are present in hypophyseal tumor, they decided in favor of a tumor in the left cerebellar region. There was one symptom very prominent in this case which gave additional strength to the diagnosis of cerebellar disease, not mentioned by Dr. Hecht, and that was horizontal, vertical and circular nystagmus. In the absence of any ear-symptoms or non-congenital ocular disease they decided that that was the result of cerebellar irritation. The fundi were negative in ophthal-

moscopic examination, but the vision was markedly reduced. The pulse rate was not affected. The operation disclosed no tumor. Dr. Beck explored the left as well as the right cerebellar region. Patient lived ten days. Post-mortem showed a small tumor of the hypophysis which was situated more on the left side of the sella than the right, and histologically appeared like the hypertrophy of the normal gland. Dr. Beck is particularly interested in the nystagmus in this case.

Dr. J. R. Fletcher stated that he had the pleasure of being present at the first operation done by Dr. Kanavel through the intranasal route. A semi-circular incision was made between the nose and the upper lip. The quadrilateral cartilage was then cut through diagonally upward, allowing the point of the nose to be easily lifted out of the way. The bony septum was cut away and the middle turbinal of one or both sides removed, he cannot say which. The anterior wall of the sphenoid cavity was well exposed. This was removed with what appeared to be some little difficulty, with the usual nasal bone-cutting forceps (Gruendwald's conchotome, he thinks). A gouge, much like the Alexander mastoid instrument, was employed to enter the floor of the sella turcica. This opening was enlarged and the tumor exposed to view and removed through it. Dr. Fletcher was much impressed with this as a good route and with the small amount of deformity. At the request of Dr. Marvel he did this operation on the cadaver the next day with some slight modification, as follows: It seemed to him unnecessary to destroy the bony septum. After the above incisions beneath the nose and through the cartilage, the perpendicular plate of the ethmoid and the vomer were cut or sawed through horizontally and the upper portion broken over to the left of the subject; the right middle turbinal was completely removed and the anterior wall of the spenoid sinus well exposed. The ostium was entered with Hajek's knife and enough of the wall broken down to allow the introduction of the head of his sphenoid punch. First the right and then the left half were very easily removed with this instrument. This instrument works so well that the use of any other seems slow and difficult to Dr. Fletcher. The sphenoid septum was broken away with simple straight forceps, exposing the upper wall of the sphenoid cavity or floor of the sella turcica. The first opening was made through this with a small Alexander gouge and enlarged with the punch, which, because of its hemispherical head, could do no possible harm. The hypophysis was then removed with cutting forceps.

In order to observe just what had been done within the cranial cavity, the skull was opened by large bone flaps in the temporal region. After lifting the brain it was plainly seen that the work was correct. Dr. Marvel demonstrated this head before the Chicago Medical Society. What strongly impressed Dr. Fletcher was the ample room and good view. Dr. Fletcher has twice seen von Eiselberg operate turning the entire nose to one side, but prefers the intra-nasal route.

DR. HARRY KAHN stated that in the discussion of the operative phase of this question the work of Hirsch seems to have been overlooked. Therefore, he takes the liberty of bringing his methods and results to the notice of the society.

In the *Journal of the American Medical Association*, August 27, 1910, page 772, Hirsch presented two methods of operative procedure: In the first, following the Hajek suggestion for the sphenoid operation, he removed the middle turbinate bone, opened the posterior ethmoid cells, then attacked the anterior wall of the sphenoid sinus, and finally uncovered a protruding tumor which proved to be a cyst of the pituitary body that presented into the cavity of the sphenoidal sinus. This operation was done under cocain adrenalin anesthesia in several sittings.

The second method of operation is also mentioned but is described more in detail in the *Archiv fuer Laryngologie und Rhinologie*, Vol. 23, No. 3, and Vol. 24, No. 1. Hirsch here describes a method by which he operated three cases of pituitary tumor successfully. The following is the techinc:

The method contemplates the opening of the spenoid sinus through a pocket made by dissecting the mucous membrane of the septum. An incision into the septal mucous membrane is made as for the Killian method for the correction of septal deviations and the muco-perichondrium is dissected on both sides. The cartilage is removed as in the septum operation. The bony septum is now attacked and the mucous membrane and periosteum is dissected back until the instrument enters the openings of the spenoid sinus. With a bone-cutting forceps the vomer and perpendicular plate of the ethmoid are cut away back to their attachment to the rostrum of the sphenoid bone. The rostrum of the sphenoid is now removed by means of chisel and bone-cutting forceps. The septum between the two sphenoid sinuses is removed. The whole of the sphenoid cavity can now be viewed. The bone which separates the tumor-mass from the cavity may, by a tap of the mallet on the chisel, be broken away. The brain membranes are cut. The tumor then pre-

sents and as much or little as desired may be removed. If the middle turbinate impinges on the septum, or is so large as to prevent the sufficient separation of the flap of the septal mucous membrane, they are then resected.

This operation is done under cocain and adrenalin anesthesia but reinforced by injection of No. 2 Schleich's solution under the septal mucous membrane. The method seems to Dr. Kahn the best so far advanced. The results are certainly as good as can be expected from any procedure. It requires skill and care, and places the operation for pituitary tumor in the rhinological rather than the general field.

Dr. George E. Shambaugh: The exposure of the hypophysis by the intra-nasal route appears to be so much better than any other method. It does not speak very well for the enterprise of rhinologists that this fact had to be pointed out to them by the general surgeon. The sphenoidal sinus was the last of the nasal accessory sinuses to be discovered surgically by the rhinologists, although it is perhaps the most readily accessible of any of the nasal accessory sinuses. In text-books that are hardly yet out of date, the sphenoidal sinus was referred to as a cavity so remote as to be out of our reach. It was the more accurate study of the anatomy of the nasal cavities, especially by Zuckerkandl that showed the accessibility of the sphenoidal sinuses to surgical interference. The operation on the sphenoidal sinuses, whether for the drainage of this cavity or for the exposure of the hypophysis, is very clearly one for the rhinologist to undertake. The technic of working through the narrow nasal chambers is one not readily acquired and the general surgeon is working under a great handicap when he attempts this kind of work. It is very natural that the general surgeon should look about for some other route, as for example, that suggested by Dr. Wagner, this evening, of going through the mouth. This, by the way, was the method suggested for reaching the sphenoidal sinuses prior to the discovery by the rhinologists of the intra-nasal route. That this entire operation upon the hypophysis can be accomplished under a local anesthetic has been demonstrated. Whether it will be necessary to remove the posterior upper part of the septum depends largely upon the variations in the nasal chambers themselves. It ought to take but a few minutes to accomplish this part of the operation together with the removal of the middle turbinates, and perhaps opening the posterior ethmoid cells sufficiently to expose the entire anterior wall of the sphenoidal sinuses. After this condition has healed, the second

operation—the opening of the sphenoidal sinuses and the exposure of the hypophysis can be undertaken.

DR. EDWIN PYNCHON: As in this operation it is desirable to have as much space as possible for work in the neighborhood of the sphenoid bone it would seem advantageous to employ Dr. Ballenger's method of exenteration of the posterior ethmoid cells in combination with removal of the anterior two-thirds of the middle turbinal. In this way more easy access would be gained for the taking of the later operative steps required.

DR. C. H. ROBERTSON states that one can gain much more room in attempting the opening of the sphenoidal sinus by going through the antrum, ethmoid and sphenoid cells.

His method is accomplished by making a Caldwell-Luc operation, going through the antrum, backward and upward through the ethmoid cells till he enters the sphenoid sinus. The partition wall or nasal wall between this cavity and the post-nasal space is broken down into one cavity. The septum is removed in about the same manner as described by Dr. Pierce. More room is thus obtained than can be had by the procedure as he described. In this manner we get as much more room as is represented by the transverse diameter of the post-ethmoid cells, which is never less than one-half cm., and may be as much as one cm. on each side. In this manner you will find it possible to open the sinus and remove the posterior wall by operating only the one side, thus saving the turbinate on the other side entire or in part. This operation is done by others and in some cases is a very excellent one as it is purposed to destroy as little tissue in the nose as is possible to the proper performance of the operation under consideration.

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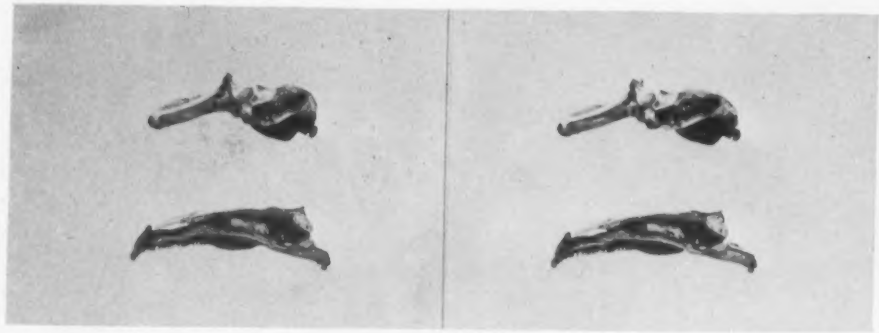
**Reaction of Proteolytic Ferment in the Diagnosis of Angina.** F. LASAGNA. *Arch. internat. di Otol. Rinol. e Laringol.*, Jan., 1911.

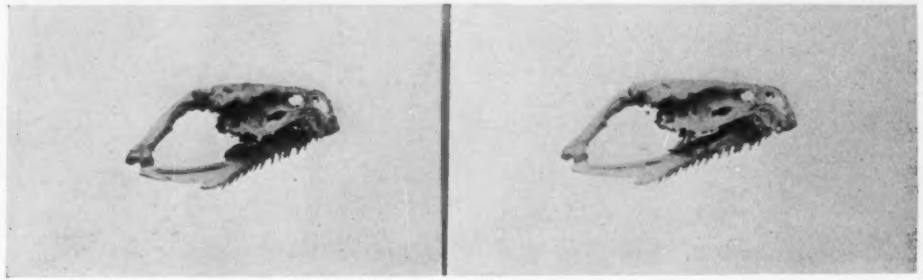
Lasagna reaches the following conclusions: (1) The exudate of a diphtheritic angina gives pronounced proteolysis of Loeffler's serum. (2) The exudate of a simple fibrinous angina shows slow and not very conspicuous digestions of the coagulated serum. (3) The exudate of Vincent's angina at the early stages of the disease causes proteolysis. ED.

# Stereoscopic views to illustrate Dr. Kyle's article.

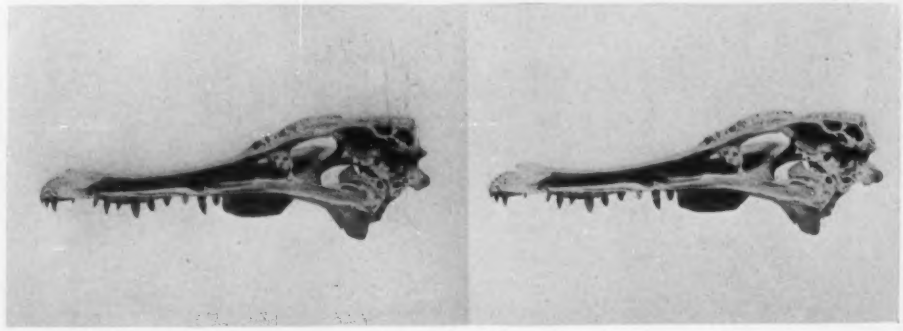
Note—Cut out illustration and mount smoothly on card-board cut to size of regulation stereoscope card (3½x7 inches).



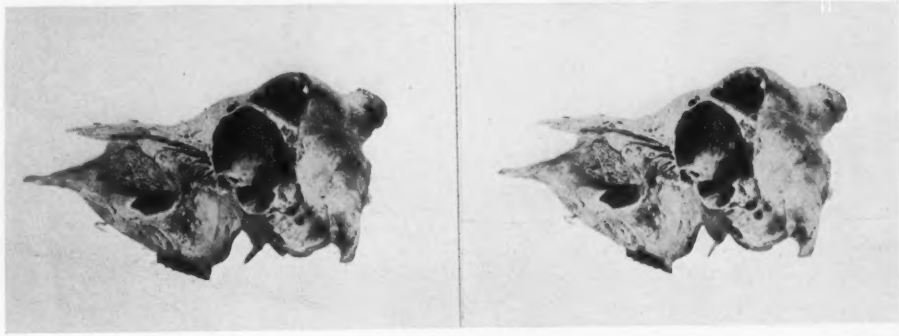
No. 1. Sagittal section, skull of a frog; small groove from brain cavity to nose is for olfactory nerve.



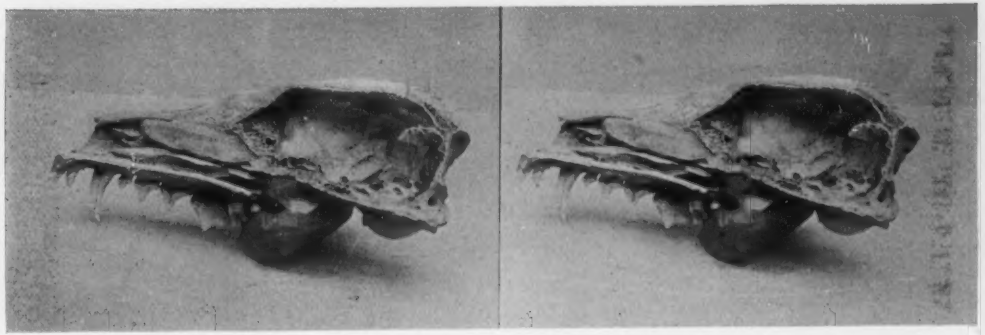
No. 2. Sagittal section, skull of a snake; large round opening anteriorly is for the olfactory nerve.



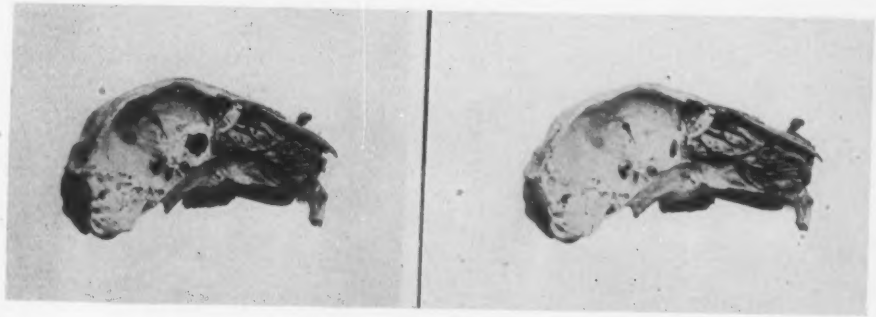
No. 3. Sagittal section, skull of crocodile: xx line of exit for olfactory nerve; just above the last tooth can be seen the middle turbinated body.



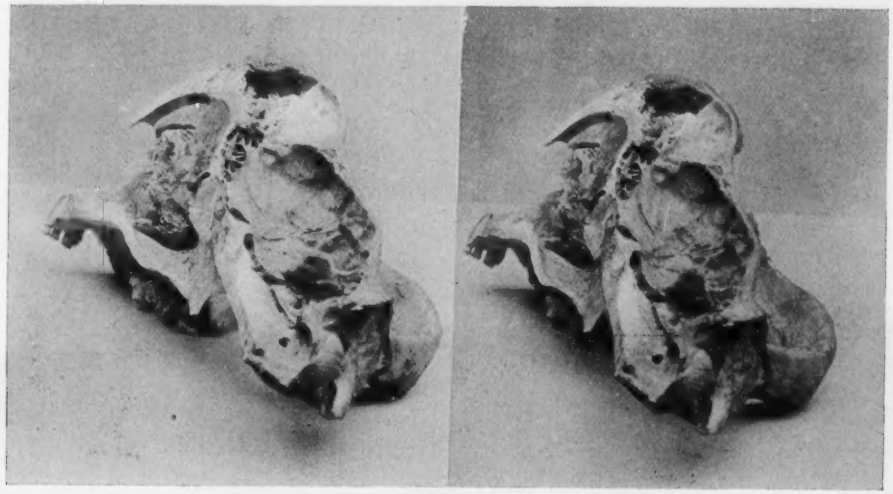
No. 4. Sagittal section, skull of a bovine, showing cribriform plate and middle turbinate.



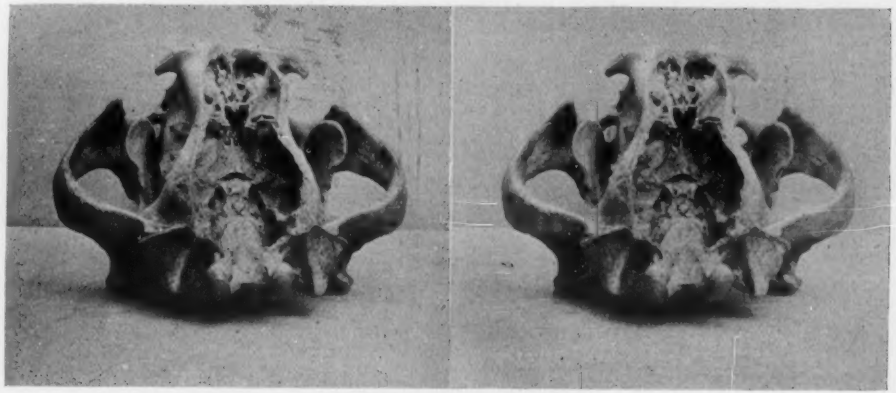
No. 5. Sagittal section, skull of a wolf, showing cribriform plate.



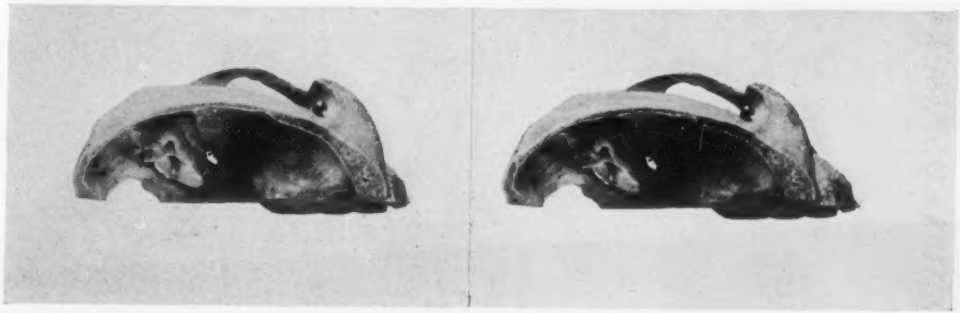
No. 6. Sagittal section, skull of a cat, showing cribriform plate and middle turbinate.



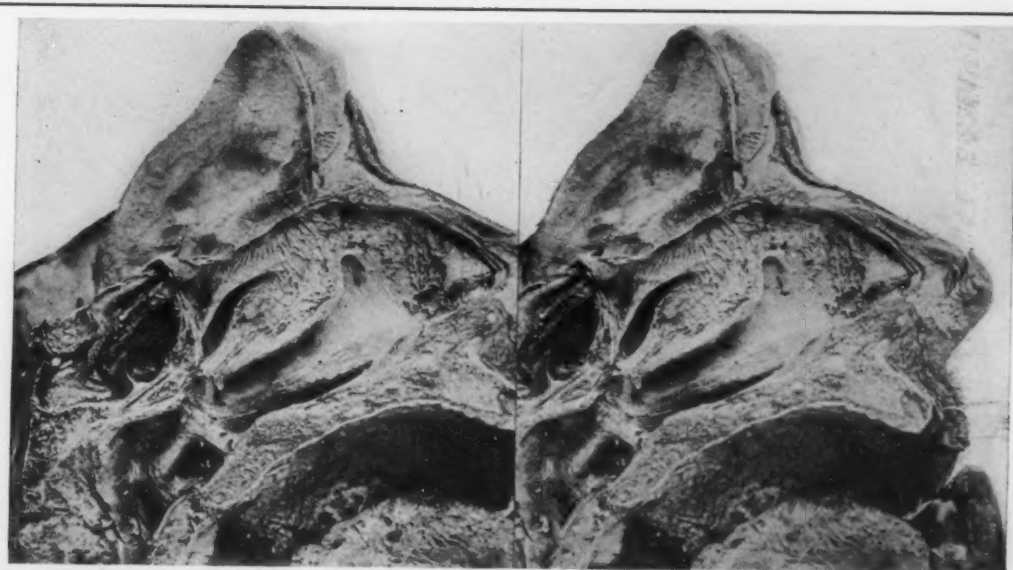
No. 7. Section of a tiger's skull, showing size of cribriform plate. Large cell above cribriform plate is air space.



No. 8. Transverse section of tiger's skull, showing brain cavity and both cribriform plates.



No. 9. Section of monkey's skull, showing small cribriform plate.



No. 10. Sagittal section, skull of man, showing olfactory nerve filaments and anterior nasal nerve, which is attached to the septum and turned upward against the frontal bones.